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THE STRATEGIC BEQUEST MOTIVE: EVIDENCE FROM SHARE

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The strategic bequest motive: evidence from SHARE*

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Abstract

This paper examines whether the empirical evidence supports the strategic bequest motive, as opposed to pure altruism, using SHARE data on ten European countries. The availability of internationally comparable data, as in SHARE, allows exploiting the cross-country variability in inheritance laws and cultural backgrounds to identify the operation of a strategic bequest motive determining the attention that adult children provide to their elderly parents.

JEL classification: D12, J14.
Keywords: intergenerational transfers, strategic bequest, inheritance laws, multiple imputation.

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1 Introduction

The modelling of bequests is crucial in understanding capital accumulation and family behaviour. Two main theories have been proposed to explain intergenerational transfers: altruism and exchange. According to *altruism*, parents care about their children and plan to leave an inheritance independently of any reciprocating help (Becker, 1974). In the *exchange* model, parents are still altruistic in that they care about their children's well-being but at the same time they try to influence their children's actions and induce them to provide more services by threatening to withhold a bequest (Bernheim *et al.*, 1985). Distinguishing between the altruistic and the strategic bequest motive has important policy implications: the effectiveness of government redistribution to tackle inequalities across or within families, transmission behaviour and family relations all depend on the nature and extent of intergenerational transfers (Altonji *et al.*, 1997).

The aim of this paper is to examine whether the empirical evidence supports the strategic bequest motive, as opposed to pure altruism, using data from the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE) on ten continental European countries. As long as in the market there are no substitutes for attention provided by children to their parents, the exchange model can be tested empirically. The test is based on a significant and positive effect of the bequeathable wealth held by the parents on the amount of attention they receive from their children, when controlling for several individual and household characteristics.

Previous studies based on US (Bernheim *et al.*, 1985; Sloan *et al.*, 1997; Perozek, 1998) and Japanese data (Yamada, 2006) have found mixed empirical evidence on the validity of the exchange model. To the best of my knowledge, this is the first paper to investigate this issue using a European dataset. The study complements the existing literature in two other ways. First, internationally comparable data, as in SHARE, allow exploiting the cross-country variability in inheritance laws and cultural backgrounds to identify the operation of the strategic bequest motive. Continental Europe is interesting because parents are not allowed to completely disown their adult children. Second, this paper distinguishes between the effects of real and financial wealth on the attention provided by children to their elderly parents and offers a possible explanation to why the elderly are not likely to decumulate housing wealth, contrary to the predictions of the life-cycle model of consumption and saving (see Venti and Wise, 2004, for the US and Chiuri and Jappelli, 2006, for Europe).

The plan of the paper is as follows. Section 2 reviews the theoretical model. Section 3 describes the data used in the analysis. Section 4 and 5 present the econometric specification and the empirical results. Finally, section 6 concludes.

2 The theoretical model

In the exchange model parents are *imperfectly* altruistic. On the one hand, they care about their children; on the other, they care also about some action that the children might take (in this case the amount of attention they provide). More formally, parents' utility U_P depends on their own consumption c_P, the attention and services provided by each of their children $a^{(1)}$, $a^{(2)}, ..., a^{(N)}$ and their children's utilities $U_K^{(1)}$, $U_K^{(2)}, ..., U_K^{(N)}$, where N is the number of offspring:

$$U_P\left(c_P, a^{(1)}, a^{(2)}, ..., a^{(N)}, U_K^{(1)}, U_K^{(2)}, ..., U_K^{(N)}\right)$$

On the contrary, children are selfish and care only about their own consumption c_K and the attention they provide to their parents. Therefore, the utility function of child i can be represented as:

$$U_K^{(i)}\left(c_K^{(i)}, a^{(i)}\right)$$

The assumptions of the model are that U_K increases with a only for low levels of attention but then decreases, while parents' utility always increases with the level of attention but might decrease for too high level of a. Bernheim et al. (1985) show that parents manage to elicit attention from their children by committing to a bequest rule that depends on the behaviour of the beneficiaries. According to this rule, the child will be disinherited in favour of her siblings or other beneficiaries if she does not provide at least a certain amount of services. Therefore, in this context bequests arise from a bargaining process where all the decision power is assigned to parents, so that any surplus generated from the interaction with the beneficiaries will accrue to the testator.

The implication of the model is that bequeathable wealth will have a positive and significant effect on the amount of attention that children provide to their elderly parents if the threat of disinheritance is credible. In order for the threat to be credible, two conditions must be satisfied. First, there must be at least two potential beneficiaries - the testator cannot credibly threaten universal disinheritance. Second, parents must credibly commit themselves to the total size of the bequest. One way to make a commitment to the total size of the bequest is by holding wealth in illiquid form, such as durables or housing, especially if transaction costs of selling a house are high and the mortgage market is not well developed. Housing differs from financial wealth also in that it is usually the most conspicuous asset in household portfolios and its value and trading can be easily verified by children. Therefore, I expect to find differences between financial and real wealth with respect to the effect they have on the amount of attention that children provide to their parents. If this result holds, it might help explaining one of the empirical puzzles in the consumption and housing literature: contrary to the predictions of the life-cycle model, the elderly do not reduce housing equity by moving from owning to renting, trading down or using equity line schemes.

3 Data and sample selection

This study uses data from the first public release version of the 2004 Survey of Health, Ageing and Retirement in Europe[1] on ten European countries: Austria (AT), Denmark (DK), France (FR), Germany (DE), Greece (GR), Italy (IT), Netherlands (NL), Spain (ES), Sweden (SE) and Switzerland (CH). SHARE collects extensive information on health, socioeconomic status and family interactions of individuals aged 50 and over. The respondents are the elderly parents. In each household the family respondent, who is randomly selected in SHARE, provides basic data on all living children (gender, age and proximity), whereas more detailed information relevant for this study (frequency of contact between the child and the parent, marital status and number of kids) is only asked for up to four children. When there are more than four children, the program sorts them in ascending order by minor, proximity and birth year, where minor is defined as 0 for all children aged 18 and over and 1 for all others, and then selects the first four. In this context, the non-randomness of the sample does not cause the estimates to be inconsistent because individuals are selected according to a fixed and known rule that involves only exogenous variables (Wooldridge, 2002, pp. 552-556). I use the data to construct a child-level file where the unit of observation is the kid. The advantage is that this approach allows us to include child characteristics in the analysis that, as documented in Perozek (1998), are important determinants of attention.

[1]This paper uses data from the early Release 1 of SHARE 2004. This release is preliminary and may contain errors that will be corrected in later releases. The SHARE data collection has been primarily funded by the European Commission through the 5th framework programme (project QLK6-CT-2001-00360 in the thematic programme Quality of Life). Additional funding came from the US National Institute on Aging (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, Y1-AG-4553-01 and OGHA 04-064). Data collection in Austria (through the Austrian Science Fund, FWF), Belgium (through the Belgian Science Policy Office) and Switzerland (through BBW/OFES/UFES) was nationally funded. The SHARE data set is introduced in Börsch-Supan et al. (2005); methodological details are contained in Börsch-Supan and Jürges (2005).

The benchmark analysis will focus only on kids whose parents are married and are both still alive. The reason is that the use of bequests to obtain attention should be more effective when there is only one parent; therefore, if the empirical results support the exchange model for this sample, then the evidence should be even stronger for children with single parents. As a robustness check, I will re-estimate the model including in the sample also children of single parents. The sample is further restricted to non-cohabiting children aged 18 or over. Other authors have excluded from the analysis only children. Their underlying hypothesis is that offspring are the only credible beneficiaries. However, this might not be true in reality. Therefore, I assume that as long as the law allows the testator to disown at least partially her children in favour of other beneficiaries (such as other relatives, charities, NPOs) the threat of disinheritance is always credible. The final sample contains 14,690 observations (table 1).

[TABLE 1 ABOUT HERE]

4 The econometric specification

Empirically, the implication of the model is that the amount of attention that each child K provides to her elderly parents is a function of parental wealth per child. As Perozek (1998), I estimate the following equation:

$$contact_K = \beta_0 + \beta_1 wealth_P + \boldsymbol{\gamma}' X_K + \boldsymbol{\delta}' Z_P + \varepsilon_K$$

where X_K and Z_P are vectors of individual characteristics of the kid and the parent, respectively, that I employ as control variables and ε_K is the error term. Following previous studies (Bernheim *et al.*, 1985; Sloan *et al.*, 1997; Perozek, 1998) I measure attention as the number of contacts between the child and her parents. In SHARE respondents report frequency of contacts[2],

[2] Any kind of contact, either in person, by phone or mail.

which I translate into number of contacts as follows: never - 0, less than once a month - 3, about once a month - 12, about every two weeks - 26, about once a week - 52, several times a week - 156, daily - 312. The variable is then normalised to be equal to 1 if the child provides the maximum amount of attention possible (daily contacts).

Table 2 reports the description of all variables included in the estimation.

[TABLE 2 ABOUT HERE]

Wealth is defined as household net worth, which is the sum of real and net financial assets:

- *Net financial wealth* is equal to gross financial assets (bank accounts, government and corporate bonds, stocks, mutual funds, individual retirement accounts, contractual savings for housing and life insurance policies) minus financial liabilities;

- *Real wealth* is the sum of the value of the primary residence net of the mortgage, the value of other real estate, owned share of own business and owned cars.

Missing values for both real and financial wealth are filled in using multiple imputations as described in Christelis *et al.* (2005). Multiple imputation is a Monte Carlo technique in which missing values are replaced by a few simulated versions, five in this case (Little and Rubin, 2002). In what follows, each of the simulated datasets is analysed by standard methods and the results are combined to produce estimates and confidence intervals that incorporate missing-data uncertainty. In particular, the coefficients are computed as the mean of the within imputation coefficients over the five imputations and the standard errors account for within and between variability of the estimates[3].

[3]See the appendix for details on how to analyse multiply-imputed datasets.

In this model wealth is likely to be endogenous. In fact, if a strategic behaviour exists, then parents will hold a larger amount of wealth if their children have frequent contacts with them. Moreover, unobserved factors related to individual preferences might influence both the amount of attention provided by children and the bequeathable wealth held by the parents. For instance, some kids get along well with their parents while others do not. Good child-parent relationships will induce children to provide more attention and parents to hold a larger amount of wealth. Previous studies address this issue by adopting a 2SLS estimator, where the additional instruments are life-time earnings in Bernheim et al. (1985) and the socio-economic index in Perozek (1998). Given the unavailability of these variables for my data, wealth is instrumented with dummies for respondent's education (None, Primary school, High School diploma, College education), in addition to the number of rooms of the house as a proxy for standard of living[4].

The controls included in the regression related to the characteristics of the respondent parent are: the macro-area where she lives to account for differences in cultural backgrounds, a quadratic in age and dummies for whether the parent is female, in bad health, and suffers from depression. I also control for several child characteristics that are likely to influence attention: in addition to age, I include dummies for whether the kid is female, married, has kids, for the number of siblings and for the distance from the parental house. One might argue that in this model distance is endogenous: children who do not get along with their parents will tend to live farther away from them. However, many other authors assume proximity to be an exogenous determinant of contact (Greenwell and Bengtson, 1997; Hank, 2007; Perozek, 1998): the argument is that location decisions are usually independent of a child's relationship with her parents and are determined by other external factors, such as job market opportunities. Summary statistics for the variables included in the regression are presented in table 3.

[4]The variable "number of rooms" is recorded for both owners and renters.

[TABLE 3 ABOUT HERE]

Another issue is that observations belonging to the same family or household are not cross-sectional independent. This correlation does not cause the estimates to be inconsistent but implies that standard errors are calculated incorrectly. For this reason, I use a variance-covariance matrix that is robust assuming that observations on individuals drawn from the same family (cluster) are correlated with each other but observations on individuals from different families are not. The estimator adopted allows for any form of intra-cluster correlation (Baum et al., 2003).

4.1 The effect of inheritance laws

One of the assumptions of the exchange model is that parents can disinherit their children if they wish. However, in reality this is not possible in most continental European countries or, at least, it is possible just up to some extent. Usually children and the surviving spouse are reserved a statutory share, independently of the deceased's will. Therefore, in this framework the testamentary freedom allowed by law is likely to be a significant determinant of the amount of attention that children provide to their elderly parents. For this reason, I introduce in the model an indicator of the testamentary freedom allowed by law, measured as the fraction of wealth of which the individual can dispose. Table 4 reports the disposable share by country when there are at least one child and a surviving spouse and table 5 the different inheritance laws across Europe.

[TABLE 4 AND 5 ABOUT HERE].

5 Empirical results

The OLS estimates of the relevant parameters are presented in table 6. The first column confirms that wealth has a significant (at the 10 percent level) and positive effect on the amount of attention that children provide to their parents, thus supporting the exchange model. Column (2) disentangles the effects of the two components of net worth: net financial and real wealth. Interestingly, only real wealth is found to be positive and significant. The implication is that parents manage to influence their children's behaviour only by holding a substantial amount of real wealth, which is mainly housing, whereas financial wealth has no effect. Two reasons might explain this result. First, by holding wealth in illiquid form, the parent commits herself to the total size of the bequest, thus making the threat credible. This is particularly true in countries where the transaction costs involved with selling a house are particularly high and where the mortgage market is less developed. Second, real estate is a visible asset. While a parent could easily hide from her child transactions in financial assets, it is more difficult to sell a house without some publicity. Therefore, one of the reasons why elderly do not trade down in their housing stock may be that it serves as a promise of future bequests to induce children to provide more attention.

[TABLE 6 ABOUT HERE]

As previously noted, in this framework wealth is likely to be endogenous. For this reason, I re-estimate the model using two stage least squares, where the excluded instruments are dummies for the education of the respondent parent (Primary school, High School diploma and College education, where the reference group is composed by parents with no education*)* and the number of rooms of the parental house. The relevance and validity of the instruments is formally tested. Table 8 reports the F-test for the joint significance of the instruments in the first stage regression and the Hansen-J statistics for the validity of instruments, in addition to the Hausman test, which confirms that the wealth variables cannot be treated as exogenous in this model.

The 2SLS estimates are presented in table 7.

[TABLE 7 ABOUT HERE]

The results qualitatively confirm what has already been discussed for the OLS regression. However, the magnitude of the coefficients on the wealth variables is much larger when accounting for their endogeneity. The last two columns show that the testamentary freedom allowed by law is highly and positively correlated with the attention that children provide to their elderly parents: for a given level of wealth, a higher disposable share increases the number of contacts. This result holds for all the specifications.

The behaviour of the control variables is in general consistent with the literature on contacts between children and parents. In particular, Southern European countries exhibit the closest family bonds while in Northern and Central Europe family links appear to be weaker (Hank, 2007). Gender seems to be a significant determinant of contacts: daughters tend to provide more attention than their male counterparts and female parents are more likely to receive it. Furthermore, as a child ages and gets married she becomes less able to provide attention to her parents. However, if the kid has children of her own, the number of contacts is higher, possibly because she might take advantage of grandparents for help with child care and visit them more frequently. Contacts decrease as the number of siblings increases. One possible explanation is that children in large families might tend to free-ride on their siblings if attention is considered as a public good. A poor self-perceived health status of the elderly parent seems to have a positive effect on the attention received from children, whereas suffering from symptoms of depression tend to decrease the number of contacts (but these effects are not always significant). Finally, as expected, geographical distance is very strongly correlated with the frequency of child-parent contacts.

Table 9 shows that the results of this paper are robust to changes in the composition of the sample. The first two columns report the 2sls estimates when only children are excluded from the analysis, as in related works on strategic bequests, whereas columns (c) and (d) include in the sample both only kids and kids whose parents are singles. The disposable share for children with a single parent can be calculated from table 5. The effects on attention of both real assets and the testamentary freedom allowed by law are even stronger than in the benchmark case and the coefficient on financial wealth is either not significant (third column) or marginally significant but negative (fourth column). The tests on the validity and relevance of the additional instruments are presented in table 10.

6 Conclusion

This paper examines whether the empirical evidence supports the exchange model, as opposed to pure altruism, using data from the first wave of the Survey of Health, Ageing and Retirement in Europe (SHARE) on ten European countries. The availability of internationally comparable data, as in SHARE, allows exploiting the cross-country variability in inheritance laws and cultural backgrounds to identify the operation of a strategic bequest motive determining attention provided by children to their elderly parents. At issue is whether parents try to influence their children's behaviour by threatening to disinherit them.

The empirical results seem to support the hypothesis that bequests are partly used by parents to induce their kids to provide more attention: contacts between parents and children are positively correlated with the amount of wealth held by the testator. Furthermore, when distinguishing between the effects of financial and real wealth, only the latter is found to be a significant determinant of attention. I argue that this result might help explaining why individuals do not tend to reduce housing equity in old age, contrary to the predictions of the standard life-cycle model of consumption and saving. In addition, I introduce in the model an indicator of the testamentary freedom allowed by law in the different SHARE countries and I find it to have a positive and significant effect on the amount of attention that children provide. The results are robust to changes in the composition of the sample.

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A Analysing multiply-imputed data sets

In SHARE missing values for both real and financial wealth are replaced by five simulated versions using multiple imputation techniques. This appendix show how to analyse multiply-imputed data sets (see also Schafer, 1997, and Rubin, 1987). In general, with m imputations it is possible to obtain m different estimated vectors of coefficients $\widehat{\boldsymbol{\theta}}^{(1)}$, $\widehat{\boldsymbol{\theta}}^{(2)}$... $\widehat{\boldsymbol{\theta}}^{(m)}$ and m variance-covariance matrices $\widehat{V}^{(1)}$, $\widehat{V}^{(2)}$... $\widehat{V}^{(m)}$. According to Rubin's rule, the multiple imputation estimate for θ is simply computed as the mean of the within-imputation coefficients:

$$\overline{\boldsymbol{\theta}} = \frac{1}{m} \sum_{i=1}^{m} \widehat{\boldsymbol{\theta}}^{(i)} \tag{1}$$

and the standard errors account for both within and between variability. Define the within imputation variance-covariance matrix as:

$$\overline{V} = \frac{1}{m} \sum_{i=1}^{m} \widehat{V}^{(i)}$$

and the between imputation variance-covariance matrix as:

$$B = \frac{1}{m-1} \sum_{i=1}^{m} \left(\widehat{\boldsymbol{\theta}}^{(i)} - \overline{\boldsymbol{\theta}}\right) \left(\widehat{\boldsymbol{\theta}}^{(i)} - \overline{\boldsymbol{\theta}}\right)^{T}$$

Then the total variance is:

$$T = \overline{V} + \left(1 + \frac{1}{m}\right) B \tag{2}$$

A.1 A cautionary note

It should be noted that, as Schafer (1997, p. 109) points out, "with multiple imputation, just as with complete data, it is good practice to perform the analysis on a scale for which the asymptotic normal approximation is likely to work well; for example, with a correlation coefficient, it is advisable to apply the Fisher's transformation" to the coefficients:

$$z^{(i)} = \frac{1}{2}\log\left(\frac{1+\rho^{(i)}}{1-\rho^{(i)}}\right)$$

combine them using Rubin's rule and then report the result back to the original metric. A similar reasoning should apply also to the R^2 of a regression.

A.2 Hypothesis testing

Suppose one wants to test the null hypothesis that $\boldsymbol{\theta} = \boldsymbol{\theta}_0$. From standard inference theory, it follows that the associated Wald statistic is:

$$W_1\left(\boldsymbol{\theta}_0, \overline{\boldsymbol{\theta}}\right) = \frac{\left(\overline{\boldsymbol{\theta}} - \boldsymbol{\theta}_0\right)^T T^{-1}\left(\overline{\boldsymbol{\theta}} - \boldsymbol{\theta}_0\right)}{k}$$

where k is the number of restrictions to be tested. Unfortunately, it is not easy to derive the distribution of this statistic since with a small number of imputations, B is likely to be a not very precise estimate of the corresponding population quantity. However, it can be shown that under certain assumptions a less noisy estimate of the total variance-covariance matrix is:

$$\widetilde{T} = (1+r_1)\overline{V}$$

where

$$r_1 = \left(1+\frac{1}{m}\right) tr\left(\frac{B\overline{V}^{-1}}{k}\right)$$

Li et al. (1991) have proved that

$$W_2\left(\boldsymbol{\theta}_0, \overline{\boldsymbol{\theta}}\right) = \frac{\left(\overline{\boldsymbol{\theta}} - \boldsymbol{\theta}_0\right)\widetilde{T}^{-1}\left(\overline{\boldsymbol{\theta}} - \boldsymbol{\theta}_0\right)}{k} \sim F_{k,\nu_1}$$

with

$$\begin{aligned} v_1 &= 4 + [k(m-1)-4]\left[1+\left(1-\frac{2}{k(m-1)}\right)\frac{1}{r_1}\right]^2 & \text{if } k(m-1) > 4 \\ &= (k-1)\frac{m}{2}\left(1+\frac{1}{k}\right)\left(1+\frac{1}{r_1}\right)^2 & \text{if } k(m-1) \leq 4 \end{aligned}$$

A.2.1 Applications: relevance of instruments and endogeneity test

The test for the relevance of instruments can be carried out as follows. First, compute the multiple imputation estimates of the parameters from the first stage regression of the endogenous variable on all the exogenous instruments. Next, calculate the Wald statistic corresponding to the null hypothesis:

$$H_0 : \overline{\boldsymbol{\theta}} = 0$$

where $\overline{\boldsymbol{\theta}}$ is the vector of coefficients on the excluded instruments.

A similar methodology can be applied to the endogeneity test using the regression based version of the test (Wu-Hausman).

A.3 Test of overidentifying restrictions

An alternative to computing the multiple imputation version of the Wald statistic form the estimated coefficients and variance-covariance matrix is to combine directly the m Wald statistics obtained from the m implicates. This method can be easily applied to the Hansen-J test.

Suppose that $J^{(1)}$, $J^{(2)}$... $J^{(m)}$ are the Hansen-J statistics calculated separately from the m imputed data sets. Then, their multiple imputation version (see Li et al., 1991) is:

$$J = \frac{\overline{J}/k - r_2(m-1)/(m+1)}{1 + r_2}$$

where

$$\overline{J} = \frac{1}{m} \sum_{i=1}^{m} J^{(i)}$$

and

$$r_2 = \left(1 + \frac{1}{m}\right) \left[\frac{1}{m-1} \sum_{i=1}^{m} \left(\sqrt{J^{(i)}} - \sqrt{\overline{J}}\right)^2\right]$$

If k is the number of overidentifying restrictions, then

$$J \sim F_{k,\nu_2}$$

where

$$\nu_2 = k^{-3/m}(m-1)\left(1+\frac{1}{r_2}\right)^2$$

B Tables

Country	Children	Households
AT	1,101	517
DK	1,040	462
FR	1,100	485
DE	2,008	990
GR	892	439
IT	1,524	729
NL	2,377	1,020
ES	1,642	667
SE	2,392	1,056
CH	614	279
Total	14,690	6,654

Table 1: Number of observations by country

Parental wealth	
wealth	wealth per child/10^6
finwealth	net financial wealth per child/10^6
realwealth	real wealth per child/10^6

Characteristics of the respondent parent	
age	age of the parent/100
age2	(age of the parent/100)^2
pfemale	dummy=1 if the parent is female
bad_health	dummy=1 if the parent is in bad health
depression	dummy=1 if the parent suffers from depression
MACROAREA	
North	dummy=1 if the parent lives in Northern Europe (DK, NL, SE)
Central	dummy=1 if the parent lives in Central Europe (AT, FR, DE, CH)
-	Reference group, not included (Southern Europe: GR, IT, ES)

Characteristics of the child	
kage	age of the kid/100
kfemale	dummy=1 if the kid is female
kmarried	dummy=1 if the kid is married
khaskids	dummy=1 if the child has kids of her own
DISTANCE	
-	reference group, not included (K lives at less than 1 km from P)
dist_1to5	dummy=1 if the distance is between 1 and 5 km
dist_5to25	dummy=1 if the distance is between 5 and 25 km
dist_25to100	dummy=1 if the distance is between 25 and 100 km
dist_100to500	dummy=1 if the distance is between 100 and 500 km
dist_over500	dummy=1 if the distance is over 500 km or K lives abroad
SIBLINGS	
only_child	dummy=1 if the child has no siblings
one_sibling	dummy=1 if the child has only one sibling
two_sibling	dummy=1 if the child has two siblings
-	reference group, not included (K has three or more siblings)

Table 2: Description of the variables

Variable	Mean	Std. Dev.
contact	0.521	0.355
wealth	0.142	0.433
finwealth	0.024	0.104
realwealth	0.119	0.416
age	0.649	0.089
pfemale	0.461	0.498
bad_health	0.369	0.482
depression	0.202	0.401
kage	0.365	0.084
kfemale	0.510	0.500
kmarried	0.682	0.466
khaskid	0.613	0.487
dist_1to5	0.202	0.402
dist_5to25	0.236	0.425
dist_25to100	0.153	0.360
dist_100to500	0.138	0.345
dist_over500	0.075	0.264
only_child	0.075	0.264
one_sibling	0.393	0.488
two_siblings	0.300	0.458
north	0.395	0.489
central	0.328	0.470

Table 3: Summary statistics

	Legal base	Disposable share
AT	Allgemeines Bürgerliches Gesetzbuch	1/2
DK	Arveloven	1/2
FR	Code Civil	1/2 if one chid,1/3 if two 1/4 if three or more
DE	Bürgerliches Gesetzbuch	1/2
GR	*Αστικος Κωδικας*	3/8
IT	Codice Civile	1/3 if one child, 1/4 if more than one
NL	Burgerlijk Wetboek, Boek 4	1/2
ES	Código Civil	1/3
SE	Ärvdabalk (1958:637)	3/4
CH	Schweizerisches Zivilgesetzbuch	3/8

Table 4: The testamentary freedom allowed by law in SHARE countries when there are at least one child and a surviving spouse

Country	Benef.	Statutory reserve	Intestacy
AT	children	1/2 of the share under intestacy	2/3 if there is a surviving spouse, 1 otherwise
	spouse	1/2 of the share under intestacy	1/3 if there are descendants, 2/3 otherwise
DK	descendants	1/2 of the share under intestacy	2/3 if there is a surviving spouse, 1 otherwise
	spouse	1/2 of the share under intestacy	1/3 if there are descendants, 1 otherwise
FR	descendants	1/2 if one, 2/3 if two, 3/4 if three or more	Either 3/4 or nude property of the whole estate
	spouse	1/4 only if there are neither descendants nor ascendants	If there are descendants: either 1/4 of the property or usufruct of the whole estate. If there are no descendants but only ascendants: 1/2 of the property
DE	descendants	1/2 of the share under intestacy (Pflichtteil). This is not a share of the estate but a money compensation in lieu of inheritance	1 if there is no surviving spouse, 3/4 (under separate and community property) or 1/2 (under zugewinngemeinschaft)
	spouse	1/2 of the share under intestacy (Pflichtteil). This is not a share of the estate but a money compensation in lieu of inheritance.	Under separate and community property: 1/4 if there are relatives in the first erbklassen (descendants), 1/2 if there are only relatives in the second order (parents, siblings and their descendants), 1 otherwise. Under zugewinngemeinschaft: 1/2, 3/4 and 1 respectively.
GR	descendants	1/2 of the share under intestacy	3/4 if there is a spouse, 1 otherwise
	spouse	1/4 if there are descendants, 1/2 if there are no descendants but only the parents.	1/4 if there are descendants, 1/2 if there are no descendants but only the parents, 1 otherwise
IT	descendants	With spouse: 1/3 if one, 1/2 if more than one. With no spouse: 1/2 if one, 2/3 if more than one	With spouse: 1/2 if one, 2/3 if two or more With no spouse: 1
	spouse	1/2 if there are no descendants, 1/3 if there is one child, 1/4 if more than one	1/2 if there is one descendant, 1/3 if more than one. If there are no descendants but only ascendants or siblings, the spouse obtains 2/3.
NL	descendants	The spouse receives the whole estate and the children receive their share in the form of a non-payable claim (1/2 of the property of the estate)	The surviving spouse is in the same position as the children and they take equal shares.
ES	descendants	2/3	The children inherit the whole estate but the surviving spouse obtains the usufruct of 1/3 of the property.
	spouse	Usufruct of 1/3 of the property of the estate if there are descendants, 1/2 if there are no descendants but only ascendants, 2/3 if there are only other relatives.	Usufruct in 1/3 of the property of the estate if there are descendants, 1/2 if there are no descendants but only ascendants, 2/3 if there are only other relatives.
SE	descendants	1/2 of the share under intestacy. Note that the surviving spouse is not entitled to a forced share.	The surviving spouse obtains all assets. At the death of the surviving spouse, children obtain half of the property. If there is no surviving spouse, the whole estate goes to the descendants.
CH	descendants	3/4 of the share under intestacy	1/2 if there is a spouse, 1 otherwise
	spouse	1/2 of the share under intestacy	1/2 if there are descendants, 3/4 otherwise

Table 5: Inheritance laws

Sources: European Commission (Studies in judicial cooperation in civil and commercial matters), Council of Europe (2003), Zoppini (2002)

	Dependent variable: contact			
	(1)	(2)	(3)	(4)
wealth	.014**		.015**	
	(.006)		(.007)	
finwealth		-.028		-.026
		(.029)		(.029)
realwealth		.016**		.017**
		(.007)		(.007)
disp_share			.105**	.105**
			(.031)	(.032)
age	-.661	-.660	-.710	-.708
	(.443)	(.450)	(.441)	(.448)
age2	.607*	.607*	.644*	.643*
	(.330)	(.336)	(.329)	(.334)
pfemale	.022**	.022**	.022**	.022**
	(.006)	(.007)	(.006)	(.007)
bad_health	.012*	.012*	.010	.010
	(.007)	(.007)	(.007)	(.007)
depression	-.018**	-.018**	-.017**	-.017*
	(.008)	(.009)	(.008)	(.009)
kage	-.698**	-.699**	-.702**	-.703**
	(.061)	(.062)	(.061)	(.062)
kfemale	.086**	.086**	.086**	.086**
	(.005)	(.005)	(.005)	(.005)
kmarried	-.011*	-.011*	-.012*	-.012*
	(.007)	(.007)	(.007)	(.007)
khaskid	.018**	.018**	.018**	.018**
	(.007)	(.007)	(.007)	(.007)
dist_1to5	-.202**	-.202**	-.201**	-.201**
	(.009)	(.009)	(.009)	(.009)
dist_5to25	-.285**	-.285**	-.285**	-.284**
	(.009)	(.009)	(.009)	(.009)
dist_25to100	-.373**	-.373**	-.372**	-.372**
	(.010)	(.010)	(.010)	(.010)
dist_100to500	-.414**	-.414**	-.416**	-.416**
	(.010)	(.010)	(.010)	(.010)
dist_over500	-.500**	-.500**	-.501**	-.501**
	(.011)	(.012)	(.011)	(.011)
only_child	.122**	.123**	.116**	.117**
	(.012)	(.012)	(.012)	(.012)
one_sibling	.102**	.102**	.099**	.100**
	(.009)	(.009)	(.009)	(.009)
two_siblings	.054**	.054**	.052**	.052**
	(.009)	(.009)	(.009)	(.009)
north	-.161**	-.160**	-.192**	-.191**
	(.008)	(.009)	(.013)	(.013)
central	-.203**	-.202**	-.215**	-.215**
	(.009)	(.009)	(.009)	(.010)

Table 6: OLS estimates

Asterisks denote significant levels: * 10 per cent, ** 5 per cent. Standard errors robust to intra-family correlation are in parentheses.

	Dependent variable: contact			
	(1)	(2)	(3)	(4)
wealth	$.151^{**}$		$.149^{**}$	
	(.065)		(.065)	
finwealth		-.679		-.940
		(.617)		(.681)
realwealth		$.292^{**}$		$.342^{**}$
		(.131)		(.146)
disp_share			$.136^{**}$	$.159^{**}$
			(.035)	(.043)
age	-.707	-.706	$-.769^{*}$	-.775
	(.450)	(.524)	(.448)	(.561)
age2	$.642^{*}$	$.663^{*}$	$.688^{**}$	$.722^{*}$
	(.335)	(.395)	(.334)	(.425)
pfemale	$.023^{**}$	$.021^{**}$	$.022^{**}$	$.020^{**}$
	(.007)	(.008)	(.007)	(.008)
bad_health	$.018^{**}$	$.015^{*}$	$.016^{**}$	.012
	(.008)	(.009)	(.008)	(.009)
depression	$-.019^{**}$	$-.018^{*}$	$-.018^{**}$	-.016
	(.009)	(.010)	(.009)	(.010)
kage	$-.667^{**}$	$-.669^{**}$	$-.673^{**}$	$-.675^{**}$
	(.063)	(.070)	(.063)	(.074)
kfemale	$.087^{**}$	$.089^{**}$	$.087^{**}$	$.090^{**}$
	(.005)	(.006)	(.005)	(.007)
kmarried	$-.013^{*}$	$-.015^{*}$	$-.014^{**}$	$-.016^{**}$
	(.007)	(.008)	(.007)	(.008)
khaskid	$.019^{**}$	$.018^{**}$	$.020^{**}$	$.018^{**}$
	(.007)	(.008)	(.007)	(.009)
dist_1to5	$-.200^{**}$	$-.198^{**}$	$-.199^{**}$	$-.196^{**}$
	(.009)	(.011)	(.009)	(.011)
dist_5to25	$-.283^{**}$	$-.276^{**}$	$-.282^{**}$	$-.273^{**}$
	(.009)	(.011)	(.009)	(.012)
dist_25to100	$-.372^{**}$	$-.367^{**}$	$-.371^{**}$	$-.364^{**}$
	(.010)	(.012)	(.010)	(.013)
dist_100to500	$-.413^{**}$	$-.401^{**}$	$-.415^{**}$	$-.399^{**}$
	(.010)	(.014)	(.010)	(.015)
dist_over500	$-.500^{**}$	$-.496^{**}$	$-.502^{**}$	$-.496^{**}$
	(.012)	(.014)	(.011)	(.014)
only_child	$.090^{**}$	$.097^{**}$	$.083^{**}$	$.090^{**}$
	(.019)	(.023)	(.020)	(.026)
one_sibling	$.090^{**}$	$.094^{**}$	$.087^{**}$	$.091^{**}$
	(.010)	(.012)	(.010)	(.013)
two_siblings	$.049^{**}$	$.051^{**}$	$.048^{**}$	$.050^{**}$
	(.009)	(.010)	(.009)	(.011)
north	$-.157^{**}$	$-.133^{**}$	$-.196^{**}$	$-.171^{**}$
	(.009)	(.021)	(.013)	(.023)
central	$-.200^{**}$	$-.184^{**}$	$-.217^{**}$	$-.198^{**}$
	(.009)	(.016)	(.010)	(.017)

Table 7: 2sls estimates

Asterisks denote significant levels: * 10 per cent, ** 5 per cent. Standard errors robust to intra-family correlation are in parentheses.

	(1)	(2)	(3)	(4)
Relevance of instruments				
F-test (wealth):	20.96^{**}		21.17^{**}	
F-test (finwealth):		10.12^{**}		10.23^{**}
F-test (realwealth):		15.17^{**}		15.22^{**}
Test of overidentifying restrictions				
Hansen-J test	1.52	2.03	0.48	0.28
Endogeneity test				
Wu-Hausman statistic t-test in (1) and (3), F-test in (2) and (4)	-2.15^{**}	-2.09^{**}	3.11^{**}	3.43^{**}

Table 8: 2SLS tests

	Dependent variable:contact			
	N=13,583		N=21,253	
	(a)	(b)	(c)	(d)
finwealth	-.902	-1.205	-1.153	-1.529*
	(.751)	(.853)	(.787)	(.907)
realwealth	.324**	.380**	.580**	.657**
	(.160)	(.182)	(.179)	(.205)
disp_share		.157**		.188**
		(.048)		(.046)
age	-.777	-.838	-.947**	-.984**
	(.587)	(.639)	(.423)	(.455)
age2	.712	.767	.858**	.892**
	(.448)	(.490)	(.305)	(.329)
pfemale	.019**	.018**	.043**	.041**
	(.008)	(.009)	(.008)	(.009)
psingle			-.026**	-.020*
			(.010)	(.011)
BadHealth	.009	.006	.013	.011
	(.010)	(.010)	(.009)	(.010)
depression	-.020*	-.018	-.016*	-.014
	(.010)	(.011)	(.009)	(.010)
kage	-.667**	-.678**	-.453**	-.457**
	(.076)	(.080)	(.065)	(.071)
kfemale	.088**	.088**	.091**	.092**
	(.006)	(.007)	(.006)	(.007)
kmarried	-.014*	-.015*	-.017**	-.019**
	(.008)	(.008)	(.007)	(.008)
khaskid	.018**	.018**	.006	.006
	(.008)	(.009)	(.009)	(.010)
dist_1to5	-.201**	-.199**	-.202**	-.199**
	(.011)	(.012)	(.011)	(.013)
dist_5to25	-.276**	-.273**	-.289**	-.285**
	(.012)	(.013)	(.012)	(.013)
dist_25to100	-.368**	-.366**	-.376**	-.372**
	(.012)	(.013)	(.012)	(.013)
dist_100to500	-.405**	-.405**	-.405**	-.403**
	(.014)	(.015)	(.014)	(.016)
dist_over500	-.496**	-.496**	-.504**	-.503**
	(.014)	(.015)	(.013)	(.014)
only_child			.074**	.065**
			(.024)	(.027)
one_sibling	.094**	.091**	.080**	.076**
	(.013)	(.014)	(.013)	(.014)
two_siblings	.052**	.050**	.052**	.050**
	(.011)	(.012)	(.010)	(.011)
north	-.132**	-.170**	-.118**	-.153**
	(.023)	(.025)	(.023)	(.024)
central	-.185**	-.199**	-.170**	-.181**
	(.017)	(.018)	(.017)	(.018)

Table 9: 2sls estimates. Column (a) and (b): only children excluded. Column (c) and (d): both only children and children of single parents included

Asterisks denote significant levels: * 10 per cent, ** 5 per cent. Standard errors robust to intra-family correlation are in parentheses.

	(a)	(b)	(c)	(d)
Relevance of instruments				
F-test (finwealth):	8.80**	8.89**	8.58**	8.64**
F-test (realwealth):	12.64**	12.72**	18.85**	18.56**
Test of overidentifying restrictions				
Hansen-J test	0.27	0.08	0.46	0.11
Endogeneity test				
Wu-Hausman statistic	2.65*	2.43*	9.32**	8.71**
t-test in (1) and (3), F-test in (2) and (4)				

Table 10: 2SLS tests