'When I'm Sixty-Four':
Old Age, Family Values, and Private Financial Transfers

António Capela

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Abstract

Private financial transfers are becoming more and more important as ageing levels increase in Europe, with elders acting as both givers and receivers. Our study is divided in two main parts. In the first part we analyse the determinants of private financial transfers, using the Survey of Health, Ageing, and Retirement in Europe (SHARE). In the second part we analyse the importance of family values for these transfers, combining SHARE with European Values Study. We show that family functions as the main agent of private transfers. We conclude that family values drive financial transfers, mainly gifts provided by elderly individuals. We find that receipts by old-aged people are more related with need cases, such as illness and poorness; moreover, for these particular cases, family network plays a very important role, working as a safety net.

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Source: Google Ngram

Figure 1: Relevance of the words 'Ageing' and 'Demography' on publications

1   Introduction

In this new century Europe faces many challenges; it can be easily pointed out that ageing is one of the sharpest, and it came to stay. Simultaneously, the region is facing a huge debt crisis: in this moment explicit government debt in the EU stands on average at 90 percent. Two clearly distinct challenges that, nonetheless, are mutually dependent: in fact, when analysing public debt, it is important to take into consideration ageing (Borsch-Supan, Brandt, Litwin and Weber, 2013).

Ageing is clearly becoming more and more a worry for Europe. Figure 1 shows the increasing relative presence of the words "ageing" and "demography" on published books since 1800): a new theme, which was born on the XX century, but has gained increasing importance.

Pensions, health systems and long-term care are covered only on a small part by older generation's savings; they rely mostly on taxes borne by current active population and debt (Borsch-Supan et al., 2013). This creates an enormous problem: in the future the share of elderly population will be greater than it is today, and the share of active population will be smaller, thus generating a discrepancy that makes the system imbalanced.

It is expected that ageing will have a great impact on family relations and on inter-generational private transfers, as Mudrazija (2014) refers:

> "knowledge on the overall flow of transfers between family generations across life cycle, and their link with welfare regimes is still limited. (...) In an era of population ageing, when governments find it increasingly difficult to maintain current levels of support to both younger and older populations, uncovering the mechanisms that link public and private streams of intergenerational support becomes particularly important."

Hoffmann and Rodrigues (2010) predicted that in the next years, there will be a significant increase in the number and average age of informal helpers in Europe.

The purpose of this study is to analyze the main drivers of intergenerational private transfers received and given by elderly individuals. The study comprises three main parts. The first is an analysis of the determinants of inward and outward private financial transfers.[1] The second is a characterization of the importance of one's family on one's social

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[1]Some decades ago the flow of financial transfers was mainly upwards. In our days downward transfers became much more frequent, possibly due to the setting up of welfare systems (Attias-Donfut, 1995; Kohli, 1999).

network. Interestingly, we show that children are more important when one is less healthy, older, poorer, or less educated. Thirdly, we relate family values to private financial transfers. We use the European Value Study to construct an Index of Family Values per country. We then use this index in various forms to show that indeed transfers are related to family values. This is an important relation, mainly because we live in a time of change, where the concept of family is being altered. As Albertini and Garriga (2010) pointed out: people have less children today and divorce rates all over Europe increased. It is possible that these changes have implications for family transfers, and it is thus interesting to study the relationship between values and private financial transfers.

The remainder of the paper is organised as follows: in the next Section, we present a brief literature review. Section 3 discusses the data sources, together with the methodology. Section 4 presents a preliminary look at the data, which includes the descriptive statistics, and a characterisation of the relative importance of children on social networks according to the age, income, education, and health status of the individuals. We analyse the determinants of private financial transfers in Section 5. Section 6 sheds light on the relationship between family values and transfers. Finally, we provide some conclusions and directions for further research on Section 7.

2   Literature Review

2.1   Private Transfers' Benefits and Drivers

Downward financial transfers provide the means for young adults to extend their education and also to establish their independence (Attias-Donfut, Ogg and Wolff, 2005). Rosenzweig and Wolpin (1993) found that parental support is highly significant for their young-adult children, namely during periods of education or unemployment.

Downward private transfers have also benefits for elderly individuals, because they work as a means for older people to remain active and to feel useful to the society (Abdulaze and Sakkeus, 2013).

Both downward and upward intergenerational transfers have a positive impact on individual well-being (see, for example, Roll and Litwin (2013)). Albuquerque (2014) showed that intergenerational private transfers work as a safety net and as a way of reinforcing the bonds across different generations. Cornwell and Waite (2009) showed that the size of social networks is one of the most relevant determinants of well-being.

Deindl, Hank and Brandt (2013) suggested that people with poor health conditions are more likely to reside in closer geographic proximity to those in the personal network who are able to help. Abdulaze et al. (2013) showed also that usually physical limitations are related with more geographical proximity with the social network, and a closer social network is related with more financial transfers (in both directions); however severe physical limitations are negatively correlated with the network size (*ibidem*). Besides individual advantages, there are also social and state level benefits. Private financial and time transfers between generations may represent a very significant relief for State budget (Brugiavini, Buia, Pasini and Zantomio, 2013). Due to the increasing problem of ageing, with governments having difficulties to maintain the actual levels of support to pensions systems (Mudrazija, 2014), private transfers may work as a very important complement to State intervention.

Governments in Europe increased their expenditure on health during the last years, and we expect that this spending will increase with ageing (Borsch-Supan et al., 2013). Individual relations are a key factor to mitigate this negative effect. Borsch-Supan and

Schuth (2013) showed that there might be a positive relation between a larger social network and better cognitive abilities, higher subjective well-being and less depression. They argue that "social isolation diminishes the day-to-day challenges that keep people mentally fit and well because, ultimately, human beings are social entities."

Geographical proximity plays a very important role on determining the intensity and the frequency of financial networks (Albertini et al., 2010). However in this case there is a problem of inverse causality, since parents may want live closer to their children, due to their already deep relation with them (the same may happen in a minor scale with friends). Consequently, it is possible that this deep relation is the main factor that benefits financial transfers, and not the geographical proximity by itself.

Besides geographical proximity, early retirement has on average a huge negative impact on the size of the social networks. Borsch-Supan et al. (2013) find evidence "that retirement in general, and early retirement in particular, reduces the size of the social network, and in particular the number of friends and other non-family contacts in the interpersonal milieu (and not only the number of immediate colleagues)". Age plays an important role in financial transfers. Mudrazija (2014) shows that net transfers are negatively correlated with age. However the relation is not linear. When parents are younger than 70 there is a moderate decline in parent-child dyads; when their age is in the 70-79 interval there is a sharp decline; after 80 years old, the decline continues, but more moderately again (the same pattern was suggested by Cox, Eser and Jimenez (1998)).

There are important complementarities and differences between the behaviours of financial and time supports, such that parents are more likely to give financial support to children than to receive it from them. However, parents aged 70 and older were more likely to receive than to provide time support, excluding grandchild care (Albertini and Kohli, 2012; Albertini, Kohli and Vogel, 2007). Nevertheless, in what concerns receiving time support, Attias-Donfut et al. (2005) found that the likelihood of being a receiver substantially increases with age, namely after 75. Bonsang (2009) found that time and money transfers can act as substitutes.

2.2   Culture matters — Differences in Countries

Stoeckel and Litwin (2013) suggest that values depend from country to country, and that these differences have an explicit impact on the structure of family relations and on the behaviour of intergenerational transfers. In Southern Europe the role of family is particularly important, and in these countries intergenerational solidarity is stronger. For example: Portugal, Spain and Italy have a higher likelihood of having children in their social networks (*ibidem*).

Shiovitz-Ezra (2013) using the same data base than Stoeckel et al. (2013) (the fourth wave of SHARE, also used on our research) finds an apparently contradictory aspect: In Southern countries, which have a more family orientation and where people are less individualistic, there is a higher prevalence of loneliness within the elder population, than in Northern countries. There is a possible explanation for this contradiction, since in societies where is given more value to family there are larger expectations for intense relations, and the lack of response to these expectations (which are higher for conservative societies) conduces to feelings of loneliness, which may be particularly sensed by elder people (Johnson and Mullins, 1987).

This is a complex and relatively recent problem, thus knowledge on the causes and consequences of financial intergenerational transfers between agents, and their link with welfare regimes is still limited (Mudrazija, 2014). However, differences on welfare systems characteristics have an enormous impact on the nature, direction, timing and intensity
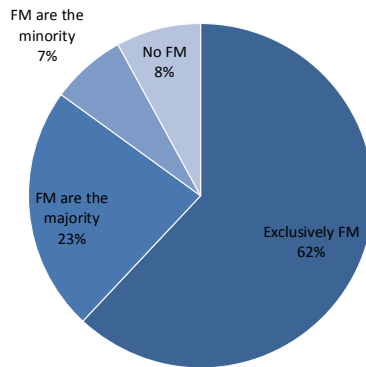
Figure 2: Family Members on Social Network

of family transfers (Esping-Andersen, 1990). This represents a clear limitation to analyse the impact of values on private transfers, because values affect public transfers, and public transfers affect private transfers.

Policy-makers have to take into account the effects produced by public transfers. Mudrazija (2014) refers that: "It appears that the magnitude of welfare regime redistribution of resources from working-age to dependent populations is negatively associated with the magnitude of intergenerational family redistribution. Therefore, while public transfers do not displace family intergenerational giving, they may decrease the relative importance of family giving for life-cycle consumption smoothing."

However it is interesting to note that there are significant differences in the age/net transfers pattern across the welfare regimes. For example in traditional countries net transfers tend to decrease faster with age than in social democratic countries (*ibidem*).

2.3 The Importance of Family

When we consider intergenerational private transfers the literature unanimously points out that family plays the major role. Stoeckel et al. (2013) showed that, in Europe, 62% of the elderly individuals with one or more confidants reported having a social network constituted exclusively by family members. And that 85% of elderly individuals with one or more confidants have a social network mostly constituted by family members. Only 8% had no family members in their network. Figure 2 displays these different shares for individuals that have ate least one member on their social network, showing the weight of family members (FM) on the social networks.

Stoeckel et al. (2013) find that an extended social network implied higher levels of satisfaction within the network; nonetheless when family does not constitute the majority of the members of the social network, there were lower levels of satisfaction.

Transfers are more frequent when there are more family members in the social network. Albuquerque (2014) analyses the Portuguese case, showing that family-based relations permit the existence of an informal, but strong and constant care regime. Familiar intergenerational transfers act as a safety net, providing income, practical assistance and home. Family plays an important role in guaranteeing assistance to other generations dealing with crisis and unpredictable events and also providing ever-lasting needs. Family members, and in particular adult children, are the main care providers for elderly individuals, who have severe limitations in performing daily activities (Kalwij, Alessie and Knoef, 2013). Thus, informal care provision increases satisfaction within the social network and

it may decrease public long-term care expenditure.

Albuquerque (2014) suggested that family relations may work as an informal care network, since there is a positive correlation between financial gifts from children and time transfers to children.

Mudrazija (2014) shows that family will always play an important role upon inter-generational support, independently from State intervention, because "public transfers do not displace family intergenerational giving: they may increase the relative importance of family giving for life-cycle consumption smoothing." Family based support is a key factor for the sustainability of long-term care systems in Europe. There is an extensive list of externalities related with family time and money transfers. For example, childcare provision by grandparents reduces the cost of raising children, and it also encourages adult labour participation on the market (Brugiavini et al., 2013). Additionally, Hoffmann et al. (2010) showed that family is also a very relevant source of informal care for older relatives, representing an important reduction for State health expenditures (Craveiro, Matos, Silva, Martinez-Pecino and Schouten, 2013).

Today families have fewer children, and there are significant differences on parent-child relations. The family structure is being transformed and these changes have inevitably impacts on the behaviour of financial and time transfers (Attias-Donfut et al., 2005). Population ageing, low fertility rates and high divorce rate create many concerns about the inclusion, welfare and well-being of actual and future elderly population: mainly for the poorest, lowest educated and most physically limited groups (Albertini et al., 2010).

Alessie, Angelini and Pasini (2011) have shown that altruism matters for long term care provision and intergenerational financial transfers. Attias-Donfut et al. (2005) suggested that: "individuals whose behaviour is generous, altruistic or charitable are likely to increase their propensity to transfer resources to other family members".

Religious values also influence the number of children per family (as data on EVS shows), Albuquerque (2014) showed that people with more children help more their parents.

Divorce rates may also be an indicator of individual values. Albertini et al. (2010) showed that divorce, controlling for income and wealth, has long-term negative effects on the intensity and frequency of intergenerational relations. Stronger family values contribute, on average, for more intense family transfers, and it may be that divorce signalizes weaker family values, and by consequence less parent-child time and financial transfers.

Values may also influence women participation in the labour market. Attias-Donfut et al. (2005) pointed out that the increasing share of women present in the labour market has considerable consequences for financial and time transfers within the social networks. Blau and Currie (2006) showed that elder individuals, that provide grandchild care, contribute to influence labour market outcomes associated with fertility decisions, encouraging women participation in the labour market and contributing to increase the fertility rate. However, there is a contradictory effect, on children's care, when it is provided by parents or by younger grandparents. In these cases, long-term care by adults may have a negative impact on women participation on the labour market(Pezzin and Schone, 1999; Bolin, Lindgren and Lundborg, 2008).

Abdulaze et al. (2013) point out that the increasing individualism on the European society, conjugated with ageing, creates weaker relations across different generations and affects negatively family ties. They also show higher education levels are correlated with having more friends in social network.

3 Data and Methodology

3.1 Data Sources

Our study has two main parts. The first is the analysis of the determinants of private financial transfers, using the *Survey of Health, Ageing, and Retirement in Europe* (SHARE) 2012 wave. This is an individual-level analysis. The second is the importance of family values for these transfers, and combines both the SHARE data and the *European Values Study* (EVS) 2008 wave. This part is done at the country level. Indeed, despite the fact that both SHARE and EVS are extensive individual-level databases, they use different samples. We thus use the EVS to construct a family values index for each of the sixteen European countries in the SHARE database, which we then (i) relate to the country fixed effects estimated in the first part; and (ii), use directly in the regression of private transfers, substituting the country dummies. We also use interaction terms between the family values index and other variables to test whether or not family values mediate the relationship between private transfers and some of its covariates.

SHARE collects information on individuals aged 50 and older. SHARE's first wave was in 2005, the second in 2008, the third in 2010, and the forth in 2012. This survey covers many different areas such as ageing, health, cognitive functions, activities, consumption patterns, intergenerational solidarity, social networks, household income, employment, pensions, life expectations and life satisfaction. It is built upon a very extensive, complete and reliable questionnaire, which is answered by each person during an interview made by a professional. This permits to collect a very complete, detailed and rich individual characterization.

The forth wave (the one that we use in this paper) collects data from 16 different countries (Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Switzerland, Belgium, Israel, Czech Republic, Poland, Ireland, Estonia, Hungary, Slovenia and Portugal), from more than 65.000 individuals (all older than 50), including their spouses. Such a wide questionnaire, built on many individuals from different countries, makes this survey a very useful tool to analyse the relationship between ageing, individual behaviour, and social relationships. This represents an enormous help for policy-makers in Europe, as ageing is becoming more and more an issue (Table 1).

The survey is harmonized with *U.S. Health and Retirement Study* (HRS), with *English Longitudinal Study of Ageing* (ELSA) and with *The Irish Longitudinal Study of Ageing* (TILDA). SHARE is coordinated by Axel Borsch-Supan, at the *Munich Center for the Economics of Ageing* (MEA). In our work we examine country fixed effects, which will in a small part be affected by different samples designs within countries, since SHARE does not have a uniform sampling design. The survey makes a calibration approach for adjusting the sample weights compensated unit non-response. In most countries, this calibration was made to national population totals decomposed by age and gender.

We also use data from the *European Value Studies* fourth wave, which is a standardized questionnaire, that started in 1981 and from then it is repeated every nine years. We have data from four different waves: 1981, 1990, 1999 and 2008. There are 47 European countries/regions participating in the fourth wave, on a total of about 70.000 interviews. The program depends on the EVS Foundation, from which the highest authority is the Council of Program Directors. The EVS project focuses mainly on basic human values, which is an area that SHARE does not cover. This large-scale, cross-national and longitudinal survey covers areas such as religion, family values, politics, society views, life and work. The questions presented in the questionnaire aim at understanding the beliefs, the preferences, the values, the opinions, the attitudes and the ideas of citizens all over

Europe.

The comparison of the four existent waves permits to conclude that we are living in Europe a time of fast and vertiginous changes[2]. Our culture is suffering a profound transformation, mainly in what refers to family and religious values[3]. This change is happening in almost every country at different velocities[4].

3.2 The Determinants of Financial Transfers

We choose SHARE's fourth wave, because it collects data on transfers between the respondents and their relatives. Individuals report the inward and outward financial transfers in the 12 months prior to the interview. Respondents were asked on the interview: "Not counting any shared housing or shared food, have you or your husband/wife/partner received/given any financial or material gift from/to anyone inside or outside this household amounting to 250 euros or more?"

The questionnaire considers only up to 3 gifts and/or receipts. The interviewer clarified that "financial or material gift" corresponds to "giving/receiving money", or covering specific types of costs such as those for medical care or insurance, schooling and down payment for a home. Loans were not considered gifts.

The data thus gives us the number of financial transfers higher than 250 euros, but not the total amounts involved. We thus cannot tell if people are net givers or net receivers, only if they engaged in private financial transfers in both directions. Therefore one model is built separately for given and received financial transfers.

For this reason we opt to use two probit models[5] (each of them with five different regressions), where the response variable is a dummy. On the first model, the response variable is equal to 1 if the person is a giver and 0 otherwise; and on the second model, the response variable is equal to 1 if the person is a receiver and 0 otherwise.

A probit model is an econometric model in which the response variable y_i can be or 0 or 1, and the explanatory variable x_i is estimated in: $\Pr(y_i) = 1 = F(x_i'b)$ where F is the univariate normal distribution function.

We choose to report the marginal effects on the means per variable, because coefficients in a probit model do not have a linear relation with the dependent variable. We follow the suggestion by Nagler (1994): "The simplest technique used to present probit estimates is to set each independent variable to its mean (or mode for discrete variables), and show the effect on $\Pr(y_i) = 1$ as the independent variables vary one at a time." Then we show the significances per variable with Z values.

The social network module in SHARE fourth wave also collects data on the characteristics of the individual's social network. We concentrated on the distinction between family members and friends inside the social network. We considered as elements of family network parents, siblings, children and grandchildren. Spouses were excluded, since they are already contemplated on the dummy variable "married".

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[2]http://www.europeanvaluesstudy.eu/page/about-evs.html

[3]*Ibidem.*

[4]*Ibidem.*

[5]When the independent variable is dichotomous OLS does not provide an efficient estimation. See Aldrich and Nelson (1986), that show that if the independent variable is binary, the variance of the disturbance term is not constant, which brings a problem of heteroskedasticity, where the estimates of the standard errors becomes invalid. Other problem arose by Nagler (1994) it is that OLS may create estimations with a probability higher than 1 and lower than 0, which have no possible interpretation. Nagler (1994) points that: "The Probit model constrains the estimated probabilities to be between 0 and 1, and relaxes the constraint that the effect of independent variables is constant across different predicted values of the dependent variable."

The questionnaire distinguishes a person as a social network member considering the answer to the following question "Over the last 12 months, who are the people with whom you most often discussed important things?" Survey participants were permitted to list up to six names, and one additional name of a person important for them for any reason (this implies a maximum of seven people).

For each probit model (for givers and receivers) we estimate the following specifications:

- In the first regression we include as explanatory variables $famnet$ (number of familiars in the social network); $friendnet$ (number of friends in the social network); $married$ (which is a dummy variable equal to 1 if the person is married and equal to 0 otherwise) and $gender$ (which is a dummy variable equal to 1 if the person is female and equal to 0 otherwise).

- In the second regression we add country dummies, using Austria as the reference one.

- In the third regression we control for $income$ (the sum of pensions, health pensions, employment wages, self-employment wages, lump sum payments, income from rent and sublet and other regular payments)[6]; $education$ (years of education); $symptoms$ (number of symptoms reported last year) and age.

- In the fourth regression we substitute $famnet$ by $childnet$ (the number of children present in the social network), for robustness purposes.

On Tables 4 and 5 we present the Z-scores, which are the effects on a cumulative normal function of the probabilities that the independent variable is equal to one, and the marginal effects, which provide a good approximation to the amount of change in the response variable that will be produced by a 1 unit change in the explanatory variable. In this case, the increase in the probability of being a giver, or a receiver, when the explanatory variable increases by 1 unit.

We use the number of symptoms as an indicator of personal health status. It does not say everything about physical condition, because it refers the number of symptoms and not its severity; however this need not be a problem, since generally more severe illnesses deteriorate health and augments the propensity for having more symptoms. We have a wide plot of answers from 0 to 13 (approximately 24% of the individuals answered 0). Our position is strengthened by the fact that symptoms are closely related with other health-variables in SHARE, such as memory condition, number of days spent on the hospital last month and mobility capacity (see Appendix 3).

3.3 Family Values

We aim at studying the impact of family values on private financial transfers. With this objective, we use the EVS to compute an index of family values per country. We use the following question: "Do you think that marriage is outdated?" There are only two possible answers: agree or disagree. Then we create a dummy based on this question equal to 1 for disagreeing, and equal to 0 otherwise. EVS offers a great variety of questions regarding values, we choose this one since it is the only yes/no question addressing directly family values that is covered by all the sixteen countries analysed in our study.

We then compute the mean value per country (see Table 5) and obtain the *Family Values Index* (FVI). With the FVI we are able to relate the 16 countries that form part

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[6]The results do not change if instead of income we use wealth as an explanatory variable.

Variable	Mean	Std. Dev.	Min	Max	Unit
Giver	0,28	0,45	0	1	Dummy equal to 1 when individual made an outward transfer of more than 250 euros in the last 12 months
Receiver	0,19	0,39	0	1	Dummy equal to 1 when individual received an inward transfer of more than 250 euros in the last 12 months
Childnet	0,80	0,98	0	7	Number of children on the social network
Famnet	1,86	1,35	0	7	Number of family members on the social network
Friendnet	0,45	0,86	0	7	Number of friends on the social network
Married	0,73	0,45	0	1	Dummy equal to 1 when the individual is married
Gender	0,57	0,50	0	1	Dummy equal to 1 when the individual is a female
Income	15.168	23.444	0	627.229	Euros (annual income)
Yeduc	10,26	4,54	0	25	Years of education
Symptoms	2,01	2,03	0	13	Number of symptoms last year
Age	65,88	10,39	24	111	Years

Table 1: Descriptive Statistics of the Data Set

on SHARE fourth wave and examine if there is a relation between our values index and on the probability on elder individuals engaging in financial private transfer either as givers or as receivers. Importantly, the EVS fourth wave is from 2008 and the SHARE fourth wave is from 2012. We are thus assuming that values are a quite stable feature that do not change significantly over these four years.

Both SHARE and EVS are individual level databases but with different samples. This forces us to rely on a country-level analysis, under the assumption that personal values are very attached to country values. We make two graphical analysis, one for givers and the other for receivers, where we cross the sixteen country FVI with the country marginal effects obtained in our 3rd regression. In order see if differences in countries behaviours on generating private financial transfers are related with the importance of family values

We use the FVI directly in the probit regressions, where each individual is assigned with the FVI of his country. We also analyse the interactions between our index and our explanatory variables $famnet$, $friendnet$, $married$, $gender$, $income$, $eduction$, $symptomns$ and age, comparing with the results obtained in the first part.

4 Preliminary Data Analysis

4.1 Descriptive Statistics

Table 1 presents some descriptive statistics.[7] Country weights on our total observations are described in Table 2.

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[7]We have 1.226 individuals that are aged less than 50, these individuals are part of our observations because they are married with people that are aged above 50 and took part in the survey.

| | SHARE | | EVS | |
Country	Observations	Percentage	Observations	Percentage
Austria	5286	9%	1510	6,2%
Germany	1572	2,7%	2075	8,5%
Sweden	1951	3,3%	1187	4,9%
Netherlands	2762	4,7%	1554	6,4%
Spain	3570	6,1%	1500	6,1%
Italy	3583	6,1%	1519	6,2%
France	5857	10%	1501	6,1%
Denmark	2276	3,9%	1507	6,2%
Switzerland	3750	6,4%	1272	5,2%
Belgium	5300	9,1%	1509	6,2%
Czech	6118	10,5%	1821	7,5%
Poland	1724	2,9%	1510	6,2%
Hungary	3076	5,3%	1513	6,2%
Portugal	2080	3,6%	1553	6,4%
Slovenia	2756	4,7%	1366	5,6%
Estonia	6828	11,7%	1518	6,2%
Total	58489	100%	24415	100%

Table 2: Country weight on data

4.2 The Role of Children in the Social Network

The width of social network is intrinsically related with the intensity and frequency of private financial transfers (Stoeckel et al., 2013). However, not only size matters. Family network and friend network play different roles.

Money receipts by the older population are essentially related with need cases, such as low income positions or health problems (Attias-Donfut et al., 2005). In these cases family is of utmost importance, because it works as the natural support for extreme cases (Mudrazija, 2014).

We characterise the importance of the family in one's social network depending on one's age, health status, *income and education*. We construct binscatters to analyse these relations, binscatters provide a non-parametric method of plotting the conditional expectation function, they describe the average y-value for equal groups of x-value. Binscatters also provide "the best linear fit line, constructed from an OLS regession of the y-residuals on the x-residuals. The slope of the fit line matches the coefficient of the multivariate regression."[8]

Figure 3 relates health condition (measured by the number of symptoms) with the percentage of children in the social network. It shows that as individuals' health deteriorates, children represent a higher percentage of total social network. (We controlled for age, since it is highly related with both variables, and here we want to highlight the effect of health in the social network constitution[9].

There is also a clear gradient when it comes to education and Income: more educated

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[8]Michael Stepner, *Binscatter*, a stata programm to generate binned scaterplots, on https://michaelstepner.com/binscatter/.

[9]"Binscatter provides built-in options to control for covariates before plotting the relationship, and can automatically plot regression discontinuities. All procedures in binscatter are optimized for speed in large datasets." *ibidem*
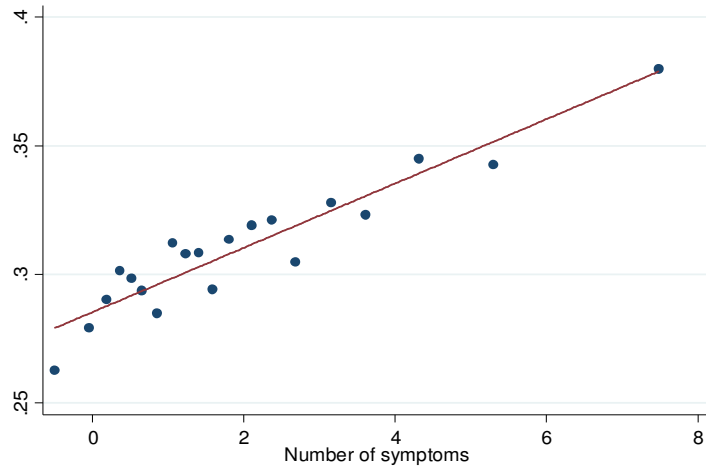
Source: SHARE 4th wave, n=58.489

Figure 3: Social Network and Health
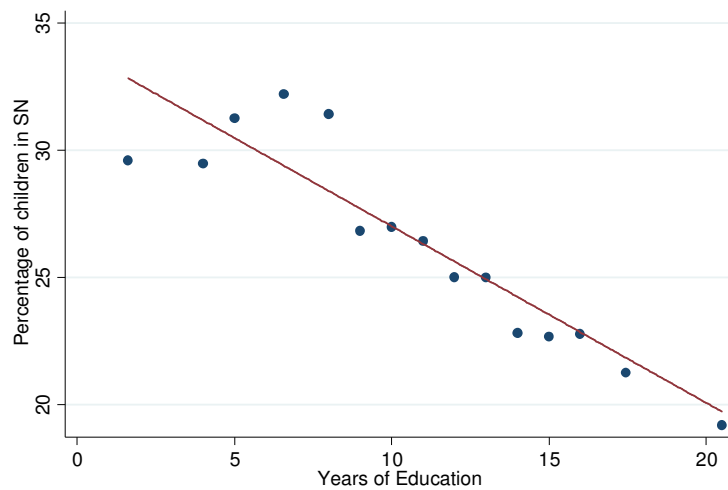
Source: SHARE 4th wave, n=58.489

Figure 4: Social Network and Education

people tend to have more friends and more family members in their social network, but the effect of education is clearly stronger in increasing the number of friends than on increasing family members. This happens because family ties have other important drivers not related with education, as we will further explain.

In Figure 4 it is possible to see the strong negative effect that more years of education have on the percentage of children in the social network, since education improves mainly the number of friends in the social network (see Appendix).

The relationship between income and the percentage of children in the social network is displayed in Figure 5. This graph strongly supports the evidence that family (namely children) is especially important for poor individuals[10]. The relation is, as expected, clearly negative, decreasing sharply until income levels of 40.000 Euros and then stabilizing.

Ageing tends to deteriorate the width of social network: it both reduces the number of friends and the number of relatives in the social network. However this reduction is

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[10]In the Appendix we have specified the relation between family members and income.
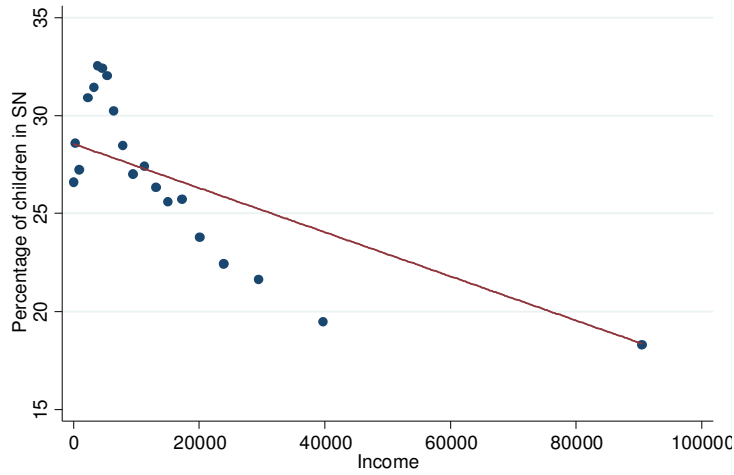
Source: SHARE 4th wave, n=58.489

Figure 5: Social Network and Income
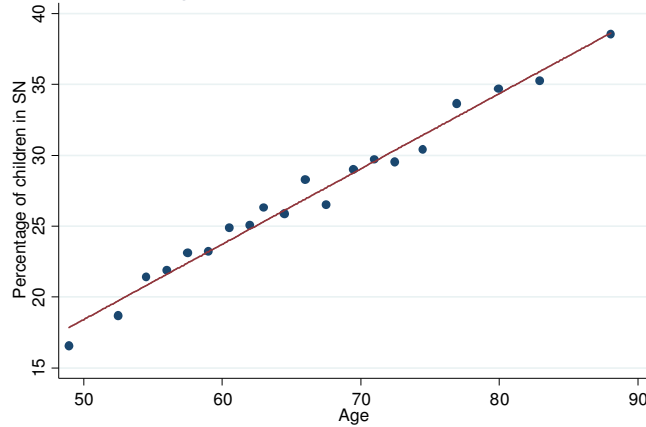
Source: SHARE 4th wave, n=58.489

Figure 6: Social Network and Age

much sharper on the number of friends, because friends have generally a similar age, and old people usually do not create new relations. With family members it is a bit different, although it also declines with age (namely due to the death of parents and siblings), while being a much smoother decline than for friends. Most of elder's individuals family net is composed by younger members (children) and sometimes with ageing new members may enter in the family network (namely grandchildren).

Figure 6 shows that the share of children, in the total of the social network, experiments an almost linear growth with ageing, reinforcing the direct positive relation between these two variables

5 'Will you still need me? Will you still feed me?'

5.1 Financial Transfers and the Constitution of the Social Network

Table 3 presents the giver probit model results, with the five different equations described in Section 4, and Table 4 the receiver results. We compute marginal effects and the

Giver	1st Regression		2nd Regression		3rd Regression	
	ME Coef	z	ME Coef	z	ME Coef	z
Family Net Members	0,036***	26,02	0,037***	26,77	0,035***	25,11
Friend Net Members	0,06***	28,45	0,055***	25,48	0,041***	18,96
Married	0,113***	25,29	0,116***	25,9	0,089***	19,18
Gender	-0,025***	-6,62	-0,024***	-6,33	-0,008**	-1,98
Country						
Austria			reference		reference	
Germany			0,015	1,21	-0,029**	-2,3
Sweden			0,06***	5,31	0,021*	1,85
Netherlands			-0,044***	-4,31	-0,09***	-8,62
Spain			-0,242***	-22,39	-0,232***	-21,17
Italy			0,006	0,63	0,012	1,24
France			-0,052***	-6,24	-0,095***	-11,19
Denmark			0,055***	5,18	0,02*	1,87
Switzerland			-0,04***	-4,33	-0,107***	-10,75
Belgium			-0,054***	-6,3	-0,122***	-13,79
Czech			0,005	0,59	-0,016*	-1,91
Poland			-0,062***	-4,94	-0,049***	-3,88
Hungary			-0,133***	-12,68	-0,135***	-12,67
Portugal			-0,164***	-13,28	-0,133***	-10,66
Slovenia			-0,101***	-9,25	-0,119***	-10,88
Estonia			-0,065***	-8,02	-0,077***	-9,23
Income					1,24E-06***	14,23
Education					0,011***	23,09
Symptoms					0,002**	2,34
Age						
Less than 55					reference	
From 55 to 64					0,006	0,97
From 65 to 75					-0,013**	-2,07
75 and more					-0,043***	-6,31

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -32.684.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 3: Giver: Regressions 1 to 3

Receiver	1st Regression		2nd Regression		3rd Regression	
	ME Coef	z	ME Coef	z	ME Coef	z
Family Net Members	0,015***	26,02	0,016***	26,77	0,015***	25,11
Friend Net Members	0,003	28,45	0,004**	25,48	0,014***	18,96
Married	-0,123***	25,29	-0,121***	25,9	-0,076***	19,18
Gender	0,011***	-6,62	0,01***	-6,33	-0,003	-1,98
Country						
Austria			reference		reference	
Germany			0,051***	1,21	0,028**	-2,3
Sweden			-0,001	5,31	-0,018*	1,85
Netherlands			0,019**	-4,31	0,018**	-8,62
Spain			-0,013	-22,39	-0,048***	-21,17
Italy			-0,017*	0,63	-0,035***	1,24
France			-0,013*	-6,24	-0,038***	-11,19
Denmark			0,12***	5,18	0,114***	1,87
Switzerland			-0,041***	-4,33	-0,056***	-10,75
Belgium			0,029***	-6,3	0,004	-13,79
Czech			0,12***	0,59	0,11***	-1,91
Poland			-0,036***	-4,94	-0,06***	-3,88
Hungary			-0,01	-12,68	-0,033***	-12,67
Portugal			-0,032***	-13,28	-0,055***	-10,66
Slovenia			-0,08***	-9,25	-0,086***	-10,88
Estonia			0,052***	-8,02	0,031***	-9,23
Income					1,24E-06***	14,23
Education					0,000	23,09
Symptoms					0,029***	2,34
Age						
Less than 55					reference	
From 55 to 64					-0,007	0,97
From 65 to 75					0,016**	-2,07
75 and more					0,12***	-6,31

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -25.730.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 4: Receiver: Regressions 1 to 3

	3rd Regression		4th Regression	
Giver	ME Coef	z	ME Coef	z
Children Net Members	—	—	0,039***	20,05
Family Net Members	0,035***	25,11	—	—
Friend Net Members	0,041***	18,96	0,04***	18,32
Married	0,089***	19,18	0,073***	15,86
Gender	-0,008**	-1,98	-0,005	-1,35
Country				
Austria	reference		reference	
Germany	-0,029**	-2,3	-0,029**	-2,33
Sweden	0,021*	1,85	0,017	1,53
Netherlands	-0,09***	-8,62	-0,09***	-8,67
Spain	-0,232***	-21,17	-0,235***	-21,47
Italy	0,012	1,24	0,008	0,83
France	-0,095***	-11,19	-0,101***	-11,87
Denmark	0,02*	1,87	0,02*	1,85
Switzerland	-0,107***	-10,75	-0,107***	-10,74
Belgium	-0,122***	-13,79	-0,123***	-13,99
Czech	-0,016*	-1,91	-0,025***	-3
Poland	-0,049***	-3,88	-0,055***	-4,38
Hungary	-0,135***	-12,67	-0,135***	-12,7
Portugal	-0,133***	-10,66	-0,133***	-10,68
Slovenia	-0,119***	-10,88	-0,128***	-11,72
Estonia	-0,077***	-9,23	-0,081***	-9,7
Income	1,24E-08***	14,23	1,26E-08***	14,54
Education	0,011***	23,09	0,011***	23,86
Symptoms	0,002**	2,34	0,003***	2,64
Age				
Less than 55	reference		reference	
From 55 to 64	0,006	0,97	0,000	-0,01
From 65 to 75	-0,013**	-2,07	-0,021***	-3,51
75 and more	-0,043***	-6,31	-0,055***	-8,01

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -32.684.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 5: Giver: Regressions 3 and 4

Z-values for each variable.

As it is expected, a larger social network increases very significantly the probability both of being a giver and/or a receiver. This confirms the results in the literature (Stoeckel et al., 2013). The effect is clearly higher for being a giver than for being a receiver.

Our results show a similar effect both from having friends or family members in the social networks. However, it is interesting to note that, for being a receiver, *friendnet* becomes significant only with the introduction of controls, in line with the preliminary evidence in Figure 3 and Figure 5, suggesting that family works as the natural support for cases of illness and poorness. Lower levels of education and ageing tend also to increase the importance of the family.

The 4th Regression uses children instead of family members in the social network without changing the coefficients signs or significance. Nonetheless, it is worth to refer that the marginal effect *childnet* is higher, both for being a giver and a receiver, than the coefficient *famnet*. This suggests that children constitute the most important part of the family network in what concerns private financial transfers in both directions, as already

	3rd Regression		**4th Regression**	
Receiver	ME Coef	z	ME Coef	z
Children Net Members	—	—	0,017***	10,78
Family Net Members	0,015***	13,05	—	—
Friend Net Members	0,014***	7,24	0,013***	6,96
Married	-0,076***	-21,13	-0,083***	-23,35
Gender	-0,003	-0,86	-0,002	-0,67
Country				
Austria	reference		reference	
Germany	0,028**	2,59	0,027**	2,57
Sweden	-0,018*	-1,74	-0,02*	-1,91
Netherlands	0,018**	2,01	0,017*	1,94
Spain	-0,048***	-5,61	-0,05***	-5,83
Italy	-0,035***	-4,04	-0,036***	-4,2
France	-0,038***	-5,09	-0,04***	-5,43
Denmark	0,114***	13	0,114***	12,97
Switzerland	-0,056***	-6,25	-0,055***	-6,22
Belgium	0,004	0,6	0,004	0,52
Czech	0,11***	15,61	0,107***	15,1
Poland	-0,06***	-5,32	-0,063***	-5,54
Hungary	-0,033***	-3,68	-0,033***	-3,71
Portugal	-0,055***	-5,23	-0,055***	-5,25
Slovenia	-0,086***	-8,47	-0,089***	-8,81
Estonia	0,031***	4,49	0,03***	4,3
Income	2,95E-07***	3,92	3,07E-08***	4,09
Education	0	-1,05	0	-0,57
Symptoms	0,029***	37,47	0,029***	37,54
Less than 55	reference		reference	
From 55 to 64	-0,007	-1,39	-0,01*	-1,86
From 65 to 75	0,016**	3,01	0,012**	2,26
75 and more	0,12***	21,33	0,115***	20,3

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -25.730.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 6: Receiver: Regressions 3 and 4

obtained by Deindl and Brandt (2011) and Ogg and Renaut (2013).

The most relevant change brought by this substitution is the negative effect on the three age groups coefficients (the decline is exponential) on both directions. This happens because with ageing the number of siblings and parents on social network decreases and the number of children on the social network increases.

5.2 Financial Transfers — Income, Education and Health

We considered *wealth* as the sum of the values of individual's house, car, bank accounts (including long term savings) and "other real estate". *income* is the sum of pensions, wages (both from employment and self-employment), lump sum payments, income from rent and sublet and other regular payments. *education* is a variable that contains the number of years that the individual spent studying.

As expected, richer people have a greater probability of being givers. Surprisingly the effect, although smaller, is positive for being a receiver. This is related with the fact that *income* and *wealth* are intrinsically related with other aspects, such as health, gender and education; but income is also related with the number and strength of individuals' social network: richer people tend to be more sociable, possibly due to the fact that they spend on average more years working, and work is the common place to constitute a solid social network (Borsch-Supan et al., 2013). Early retirement has a negative impact both on wealth and pensions, and it undermines the social network.

As the literature refers, education plays also a very important role, since it clearly augments the likelihood of being a giver, because more educated people tend to have more ties, namely with friends (see Figure 4).

Health is one of the most important drivers for being a receiver (it has a very powerful impact); and it has always a small positive, but significant impact for being a giver.

5.3 Financial Transfers and Age

The literature is very extensive on analysing the relations of informal private transfers with age. The main results are as follows (Mudrazija, 2014): first, receipts increase with age and gifts diminish; second, these two relations are not linear, but exponential; third the effect and also the non-linearity are more evident on receipts than on gifts.

We have data only for individuals older than 50. We created four different groups concerning age. In the first, which we used as a reference for our regression, we included individuals aged less than 54; in the second we included individuals aged between 55 and 64; in the third we included individuals aged between 65 and 74; and in the fourth all individuals aged 75 or more.[11]

In our results we confirm the three main claims concerning age:

- The effects are more significant for receivers than for givers;

- There is a non-linear behaviour, since there is not a significant difference from the first to the second group both for receivers and givers. However, the third group has already very significant signs for both independent variables. The impact increases a lot in the last group: it is more than three times the coefficient of the third group for givers, and for receivers it is more than seven times higher for being a receiver. This shows not only that the effect is stronger for being a receiver, but the speed

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[11]The same division is made in other papers (see, for example, Attias-Donfut et al. (2005)), one main advantage of these scaling is the separation at the age of 65, which is the retirement age for the majority of the countries under this study).
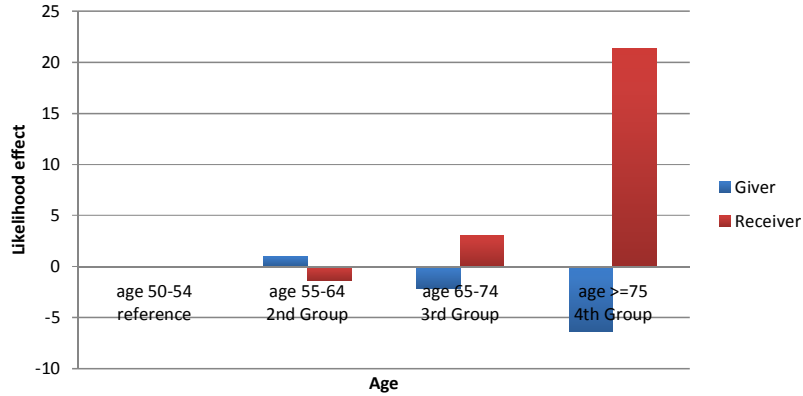
Figure 7: Age and Financial Transfers

of the decrease with age is also much higher for being a receiver (this effects are illustrated in Figure 7).[12]

5.4 Marriage and Gender

married is a dummy variable, equal to 1 if the person is married and equal to 0 otherwise. We found that being married increases very significantly the probability of being a giver. This happens because marriage generally works as a safety net; secondly it tends to increase social relations, considering that married people tend to be more socially pro-active and to have more members in social networks (see Appendix 1); a third explanation may be related with individual's values.

Nevertheless, being married significantly decreases the probability of being a receiver, but this does not constitute a surprise, since marriage works as a safety net and we did not consider as financial private gifts inter-spousal transfers[13]. This supports and gives strength to the argument that receiving financial gifts is mainly related with particular necessities, for which marriage works as a safety net.

If we consider *childnet*, instead of family members, the significance of marriage decreases, possibly due to collinearity between the marriage dummy and the number of children (married people tend to have more children). There is also an effect pointed out by Albertini et al. (2010), that divorced parents tend to have less relations with their children and this reinforces the difference in the coefficients.

gender is a dummy variable, which is equal to 1 for women and equal to 0 for men. The introduction of new control variables, *income*, *wealth* and *education*, strongly reduces *gender* significance, namely on the probability of being a receiver – this follows what is expected, since gender is negatively correlated with these three controls (see Appendix 2).

Moreover, controlling for income, education and wealth, reduces gender significance. On the probability of being a giver, the coefficient is still significant at 95%, indicating that women are less likely to being money givers than men, even controlling for income and education.

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[12]In the Appendix 4 we also present regressions that use age squared and some figures, showing non linearity behaviours on both gifts and receipts.

[13]Indeed SHARE does not collect these data. It is most likely impossible to collect these data, because most spouses live with common resources.

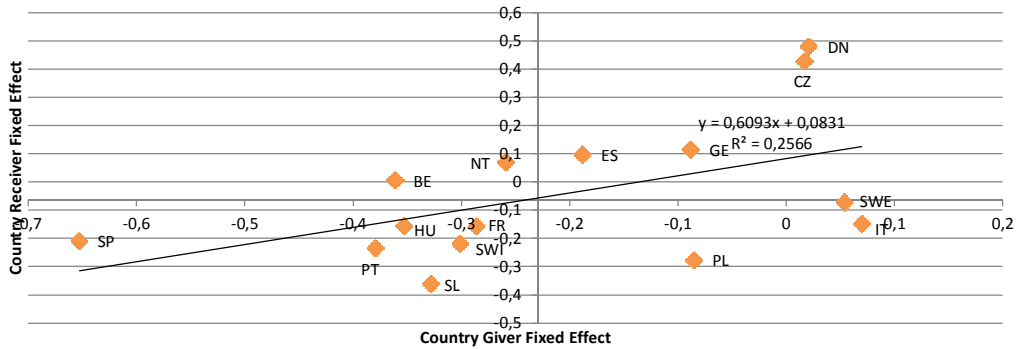| Country	Giver	Receiver
Austria (ref)	-0,361	0,005
Belgium	0,017	0,426
Czech	0,212	38,33
Denmark	0,021	0,479
Estonia	-0,188	0,096
France	-0,286	-0,158
Germany	-0,088	0,114
Hungary	-0,353	-0,157
Italy	0,070	-0,149
Netherlands	-0,259	0,068
Poland	-0,085	-0,278
Portugal	-0,379	-0,235
Slovenia	-0,328	-0,362
Spain	-0,653	-0,210
Sweden	0,054	-0,073
Swiss	-0,301	-0,220

Table 7: Country impacts

Figure 8: Age and Financial Transfers

5.5 Country Dummies

We estimated country dummies, which we will use to grasp the relationship between private financial transfers and family values. Table 7 contains the marginal values of the 3rd regression on Section 5 of the country dummies estimated in each of the regressions (giver and receiver). For simplicity, in what follows, we refer to these as country impacts.

Figure 8 relates giver and receiver country impacts. It shows that geography plays its role in determining similarities across countries. In order to be able to create this set of dummies we choose Austria as the reference country (we considered the average values for the axis).

As is suggested by Stoeckel et al. (2013) people from different countries have different interpersonal solidarities.

Country impact do not change radically with the introduction of income, age, and education controls. In the probit concerning givers, only Germany coefficient changes its sign with the introduction of controls. Sweden and Denmark loose their positive significance with the introduction of controls. Italy gains significance with the introduction of

Country	Values Index
Austria	0,695
Belgium	0,657
Czech	0,771
Denmark	0,869
Estonia	0,812
France	0,647
Germany	0,708
Hungary	0,800
Italy	0,809
Netherlands	0,730
Poland	0,824
Portugal	0,754
Slovenia	0,750
Spain	0,688
Sweden	0,801
Swiss	0,722

Table 8: Country Values Index

controls.

As for the probit concerning receivers, the introduction of controls gives significance to the marginal effects of the Sweden, Spain, and Hungary dummies; only Belgium looses its significance.

Southern European Countries have the lowest country impacts both for giving and receiving money, with Spain representing the most extreme case, although Portugal, France, Slovenia, Hungary and Switzerland are also part of this group. The only Southern European Country missing in this group is Italy.

The countries that have the highest propensity to participate in financial private transfers are located mainly in Central Europe: Denmark, Germany, Austria and Czech Republic, being Estonia the only non Central European country.

6 Family Values

6.1 The 5th Regression — Countries Values

We capture family values by the answer to the following question: "Do you think that marriage is outdated?" There are only two possible answers: agree or disagree. Then we create a dummy based on this question equal to 1 for disagreeing, and equal to 0 otherwise. With this variable we create an index value based on the mean value per country. That is, the index gives us the share of people in a given country who do not think that marriage is outdated. Thus, using this index, we are able to characterize the 16 countries.

We expect that country impacts are positively and significantly related to values index; if so we can say that family values influence private financial transfers. Table 8 presents the value of the FVI for each country.

We find that indeed there is a positive relation between country impacts and the FVI. However, this relation is much stronger for givers than for receivers. This suggests that family values have a greater impact on gifts provided by elder population than on receipts. This is in line with our discussion in Section 5.2, in which we have shown that

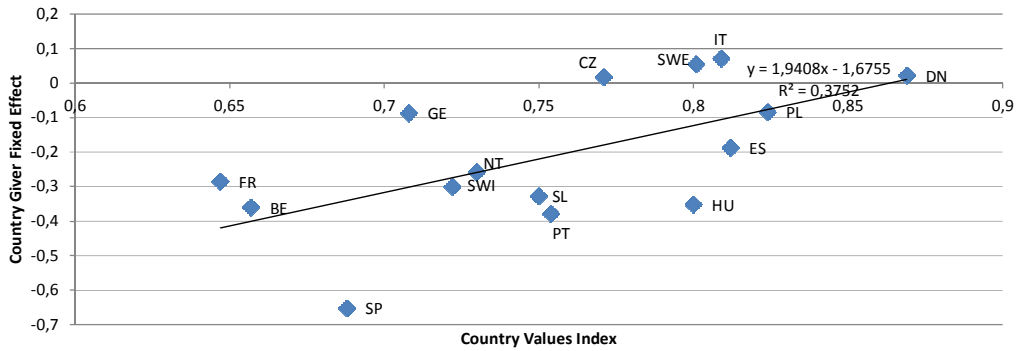Figure 9: Likelihood of being a Receiver and Family Values Index

Figure 10: Likelihood of being a Giver and Family Values Index

elder private financial receipts are related essentially with cases of necessity, thus we do not expect that values have on them such a great influence. With respect to gifts there are other aspects playing its role, namely culture, family strength, altruism and generosity —that is— values.

As a robustness check, we run our last regression, where country dummies are replaced by the FVI on the baseline specification (3rd regression in Section 5). In addition, we run an additional regression where the FVI is interacted with the following covariates: $famnet$, $friendnet$, $married$, $gender$, $income$, $education$, $symptoms$ and age. Table 9 presents the results for givers and table 10 for receivers. Our objective is to test whether or not family values mediate the relationship between private transfers and these covariates.

Comparing with our 3rd regression, in what concerns givers, the introduction of this new explanatory variable did not change any coefficient sign, although $gender$ and $symptoms$ lost their significance. In the case of receivers, there was also no changes on the sign of the coefficients, and $education$ gained significance.

As we expected our transformations did not create considerable changes in the behaviour of our variables. The FVI is positive and strongly significant both for givers and receivers. This confirms that our values index is reliable; this is: family values are important on determining private financial transfers.

	3rd Regression		**5th Regression**	
Giver	ME Coef	z	ME Coef	z
Family Net Members	0,035***	25,11	0,035***	25,09
Friend Net Members	0,041***	18,96	0,045***	20,59
Married	0,089***	19,18	0,086***	18,48
Gender	-0,008**	-1,98	-0,006	-1,63
Country				
Austria	reference			
Germany	-0,029**	-2,3		
Sweden	0,021*	1,85		
Netherlands	-0,09***	-8,62		
Spain	-0,232***	-21,17		
Italy	0,012	1,24		
France	-0,095***	-11,19		
Denmark	0,02*	1,87		
Switzerland	-0,107***	-10,75		
Belgium	-0,122***	-13,79		
Czech	-0,016*	-1,91		
Poland	-0,049***	-3,88		
Hungary	-0,135***	-12,67		
Portugal	-0,133***	-10,66		
Slovenia	-0,119***	-10,88		
Estonia	-0,077***	-9,23		
Income	1,24E-06***	14,23	1,36E-08***	16,69
Education	0,011***	23,09	0,011***	26,42
Symptoms	0,002**	2,34	0,001	0,57
Age				
Less than 55	reference		reference	
From 55 to 64	0,006	0,97	0,008	1,39
From 65 to 75	-0,013**	-2,07	-0,005	-0,9
75 and more	-0,043***	-6,31	-0,039***	-5,71
Countries Values Index			0,044***	14,53

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -32.684.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 9: Giver: Regressions 3 and 5

	3rd Regression		5th Regression	
Receiver	ME Coef	z	ME Coef	z
Family Net Members	0,015***	13,05	0,014***	12,19
Friend Net Members	0,014***	7,24	0,014***	7,37
Married	-0,076***	-21,13	-0,08***	-26
Gender	-0,003	-0,86	-0,002	-0,54
Country				
Austria	reference			
Germany	0,028**	2,59		
Sweden	-0,018*	-1,74		
Netherlands	0,018**	2,01		
Spain	-0,048***	-5,61		
Italy	-0,035***	-4,04		
France	-0,038***	-5,09		
Denmark	0,114***	13		
Switzerland	-0,056***	-6,25		
Belgium	0,004	0,6		
Czech	0,11***	15,61		
Poland	-0,06***	-5,32		
Hungary	-0,033***	-3,68		
Portugal	-0,055***	-5,23		
Slovenia	-0,086***	-8,47		
Estonia	0,031***	4,49		
Income	2,95E-07***	3,92	2,47E-07***	3,44
Education	0	-1,05	0,002***	6,86
Symptoms	0,029***	37,47	0,029***	38,43
Age				
Less than 55	reference		reference	
From 55 to 64	-0,007	-1,39	-0,01*	-1,86
From 65 to 75	0,016**	3,01	0,015**	2,78
75 and more	0,12***	21,33	0,119***	21,13
Countries Values Index			0,033***	12,87

Source: SHARE 4th wave.
Number of observations: 58.489; Log likelihood -25.730.
Significance levels are, respectively, 1%(***), 5% (**) and 10% (*).

Table 10: Receiver: Regressions 3 and 5

7 Final Remarks

7.1 Main Conclusions

As ageing becomes more and more a concern there are many studies suggesting the importance of intergenerational financial transfers. The literature also proclaims that family plays the major role on private financial transfers. In this work we analyse the relations between these kind of transfers and family values.

We find that the extension of the social network highly influences the probability of either being a giver, or being a receiver. Family members, namely children, are the main financial supporters of elderly individuals. Family is especially important for helping in the most adverse conditions, such as infirmity, advanced age and poorness. After controlling for income, education, age and health there are still clear differences between countries, suggesting that values play an important role on explaining private financial transfers. This hypothesis was strengthened when we crossed our data with a family values index.

Particularity gifts find a close relation with values. This confirmed that receipts are more related with necessitous situations and other factors exogenous to values. This was confirmed by the fact that marriage works as a strong safety net for these cases, since it decreases abruptly the likelihood of being a receiver. The demography crisis obligates Europe to rethink very seriously upon the importance of intergenerational transfers. Policies that complement and take advantage from family relations may conduce to a more efficient and fair outcome for all generations.

7.2 Further Research

There are many aspects which could be studied in more depth, which may help to understand better the drivers of intergenerational transfers. More steps can be taken to relate family values with private financial transfers.

For example, it is possible to take a similar path, in order to study private time transfers and its relation with family values.

EVS is a very wide and diverse questionnaire, thus the relation that we established with family values, can also be made with religious beliefs, or with political positions, or with other kind of social views.

Much more could be done if there was a questionnaire that crosses values evaluations (like EVS) with more detailed profile description of individuals (like SHARE). It could be interesting to analyse a plot of more countries from different continents and cultures. There is also the possibility of making a longitudinal analysis, comparing the evolution of financial transfers' drivers across time.

Finally, it may be interesting and useful to analyse the relation between family values and public intergenerational transfers. A research that relates the characterization of welfare and pension regimes with individuals' values may be important to have a more complete vision on the relation between values and financial relations across generations.

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