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The division of inter-vivos parental transfers in Europe

Javier Olivera*

Abstract

This paper explores the patterns of the division of inter-vivos financial transfers from old parents to adult children in a sample of 14 European countries drawn from two waves of the Survey of Health, Aging, and Retirement in Europe. Contrary to previous research, mostly focused on the US, this study finds a higher number of parents who divide their financial transfers among their adult children equally. On average, 36% of European parents divide equally. These results contrast sharply with the approximately 6.4%-9.2% of American parents giving equal transfers. It is possible that altruistic parents are also concerned with a norm of equal division, and therefore they do not fully offset the differences of income among their children as predicted by the standard model of altruism. The econometric results show that parents are more likely to give equal transfers if, in their view, income inequality among their children is not too high. Furthermore, the analysis is extended by adding variables at the country level. In this regard, income inequality, pension expenditures, the societal level of altruism and inheritance taxes are key to explaining country differences.

JEL classification: D64, D55, D91, H31, J18.

Keywords: inter-vivos transfers, altruism, equal division, Europe, income inequality, pensions.

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1. Introduction

The literature on family financial transfers has long established the key relationship between the motives of parents in providing financial transfers to adult children and the final effects of intergenerational redistributive policies. For example, a redistributive policy favouring the old over the young can be neutralized if the family is linked by altruism because altruistic parents will offset the reduction in child income by means of financial transfers (Becker 1974, Barro 1974 and Tomes 1981). In contrast, the so-called exchange approach (Bernheim *et al.* 1985 and Cox 1987) considers that strategic motives can explain transfer behaviour as parents seek to obtain various child services in return (e.g., help, visits, companionship). In this case, the reduction in child income is only partly compensated by the parent, and therefore the redistributive policy is not fully neutralized.

Family financial transfers are given in the form of inter-vivos transfers and bequests. In the empirical literature, mostly based on US data, it is generally accepted that inter-vivos transfers are given unequally to children while bequests are mostly equally divided. Studies by McGarry (1999), Light and McGarry (2004) and Norton and Van Houtven (2006) have found that 83%, 92% and 95% of parents in US intend to give equal bequests, respectively. In contrast, equal inter-vivos transfers occur only in 6.4% to 9.2% households (McGarry 1999 and Hochguertel and Ohlsson 2009). The equal division of estates among children is also prevalent in Europe (see Table 1), but what is sharply different between the US and Europe is the high frequency of equal division in inter-vivos transfers. Indeed, data from the Survey of Health, Ageing, and Retirement in Europe (SHARE) reveals that approximately one third of parents in 14 European countries make equal transfers to their children, though there is substantial regional variation. For example, countries such as Sweden and Denmark show more than 45% of parents giving equal transfers, while Greece shows a figure of 16%. Equal division of inter-vivos transfers has not been extensively studied nor observed in previous studies. The study by Halvorsen and Thoresen (2011) is perhaps the only

one focussed on studying the determinants of equal transfers in a European country (in Norway). A high prevalence of equal division cannot be solely explained by the standard approaches of altruism and exchange, and thus poses an interesting challenge to the empirical literature on family transfers. That is why the aim of the present paper is to study the patterns of the division of parental inter-vivos transfers in Europe.

Table 1. Percentage of parents giving equal transfers or bequests to children

Country	Inter-vivos transfers		Bequests	
	%	N	%	N
Sweden	49.3	676	95.0	220
Denmark	45.0	402	89.8	167
Belgium	43.7	263	97.8	135
France	38.5	330	92.5	133
Italy	36.7	256	96.4	169
Czech Republic	35.9	167	89.7	156
Switzerland	35.5	197	98.3	59
Netherlands	35.3	363	89.3	103
Austria	32.1	224	89.4	104
Germany	27.3	462	78.7	47
Poland	22.1	113	75.9	112
Spain	20.0	40	92.2	219
Ireland	18.4	38	n.a.	n.a.
Greece	16.0	344	89.7	87
EU total	36.2		90.4	
US	6.4-9.2		83.0-95.0	

Note: For inter-vivos transfers, figures in Europe are computed with SHARE waves 1 and 2 for parents with two or three children (>18 and not living in the same household) and conditional on the existence of at least one transfer; and for the US, figures are estimated in McGarry (1999) and Hochguertel and Ohlsson (2009). For bequests, figures in Europe are computed with SHARE-End of Life waves 2, 3, 4 and 5; and for the US, figures are estimated in McGarry (1999) and Norton and Van Houtven (2006).

This paper differs from the existing empirical literature in several respects. It exploits a dataset with rich and harmonized information on parental transfers for a sample of 14 European countries, which complements previous studies focussed on only one country. It is argued that parents are altruistic and also equality-minded, meaning that they want to give equal transfers to all their children. The generation and strength of the social norm of equal division is not studied;

instead, a stylised theoretical model considers altruistic parents who are concerned with this norm to different degrees. This setting highlights the tension between being altruistic towards children (i.e., favouring the poorer child with larger transfers) and following the norm of equal division. The model shows that compliance with the norm of equal division weakens with an increase in income differences between children, and hence parents may prefer to give unequal transfers to their children. The econometric results are based on the estimation of the likelihood of equal division and support this relationship under different robustness checks. In addition, the reasons for giving transfers directly as mentioned by parents in SHARE provide further support for the idea that altruism conflicts with the norm of equal division. In particular, only a reduced fraction of parents who mention altruistic or insurance reasons give equal transfers, while a large share of parents who do not provide specific reasons give equal transfers. Therefore, this paper contributes with the development of the literature focussed on studying the incidence of motives to give financial transfers in the family. It is important to know the distribution of motives because the responses to state and transfer taxation depends on those motives (Cremer and Pestieau 2011, Cigno *et al.* 2001). Another contribution of this paper is the assessment of the role of country-level variables on the patterns of transfer division. It is found that income inequality, redistribution, pension expenditures and average social preferences are useful in explaining country differences with respect to the division of transfers.

The paper is organized as follows. The next section presents the theoretical framework. Section 3 presents the data and some descriptive statistics. Section 4 presents and discusses the empirical strategy and the results. Section 5 analyses the potential role of contextual variables. Finally, section 6 provides a conclusion.

2. Theoretical framework

2.1 The equal division norm

The literature about the motives of parents to make transfers to adult children is large, but few studies focus on the division of inter-vivos transfers¹. Empirical studies have regularly found that the division of bequests among children is mostly equal and bequests are in general much larger than inter-vivos transfers. These facts have perhaps contributed to the fact that less attention has been paid to the division of inter-vivos transfers. An exception is the study by Bernheim and Severinov (2003), which offers a unitary framework for understanding different patterns of division of bequests and inter-vivos transfers. This approach considers a setting of altruistic parents in which inter-vivos transfers are treated as private information while bequests are public and signal parental affection. It found that the norm of equal division would prevail even in the presence of child income inequality, provided that this inequality is not too large. Halvorsen and Thoresen (2011) found econometric evidence in Norway suggesting that parents want to divide their inter-vivos transfers equally because they are averse to inequality of transfers, which is in conflict with their altruism. The study by McGarry (1999) contains a brief section that empirically assesses the determinants of equal division of inter-vivos transfers in the US and found that child income differences negatively affect the probability of making equal transfers. These studies offer arguments for hypothesizing a negative relationship between the degree of child income inequality and the strength of the norm of equal division. In addition, it also allows for the highlighting of the tension between altruism and the norm of equal division.

A variety of reasons can be found for this norm of equal division. For example, Lundholm and Ohlsson (2000) consider that parents care about a post mortem reputation. This reputation is damaged if parents depart from the social norm that stipulates equal sharing among children. In

¹ Reviews of the literature on family transfers are Pestieau (2003), Laferrère and Wolff (2006), Arrondel and Masson (2006) and Cox and Fafchamps (2008).

Laitner (1997), the social norm of equal sharing of transfers may enhance efficiency by reducing rent-seeking behaviour in siblings who compete for larger parental resources and help to preserve peace in the family. In Wilhelm (1996) parents equally distribute their estates because they would suffer psychological costs (jealousy and family conflict) if they were to deviate from equal division. Similarly, Cremer and Pestieau (1996) cite sociological theory to argue that the unrealised equal division of estates may lead to disputes among children, which is what parents fear the most. Equal division is a norm that commonly emerges in behavioural economic experiments (Camerer and Fehr, 2004; Fehr and Schmidt, 2002). In a model of social image, Andreoni and Bernheim (2009) argue in favour of a 50-50 norm for a variety of environments (including dictator games that are comparable with parental decisions concerning the division of transfers) when individuals are fair-minded, and people like to be perceived as fair.

On the basis of these ideas, the next section presents a model that highlights the tensions between altruism, child income inequality and the norm of equal division.

2.2 A model of equal division of transfers

Consider an altruistic parent who derives utility from her own consumption and the consumption of her two children. Budget restrictions dictate that the parent's consumption is equal to her income net of transfers given to children, and that the consumption of each child is financed out of own income and parental transfer. The parent must decide the size and distribution of transfers to both children by optimizing the following utility function:

$$U_u = \ln(y_p - T) + \beta[\ln(y_1 + (1 - p)T) + \ln(y_2 + pT)] \quad (1)$$

$$\text{and assume } y_p \geq y_1 \geq y_2 ; \quad p, \beta \in [0,1] \quad (2)$$

Child consumption is valued through the parameter of parental altruism β . y_p and y_i ($i=1,2$) represent parental and child incomes, respectively. In this setting, the parent finds optimal values

for the amount of total transfer T and shares $1-p$ and p of this transfer to allocate to child 1 and child 2, respectively. The F.O.C. are $\frac{\beta T(T+y_1-y_2-2Tp)}{(Tp+y_2)(T+y_1-Tp)} = 0$ and $\frac{\beta(1-p)}{(y_1+(1-p)T)} + \frac{\beta p}{y_2+pT} - \frac{1}{y_p-T} = 0$, and therefore the optimal values are $p = \frac{y_2+\beta(y_2-y_1-y_p)}{y_1+y_2-2\beta y_p}$ and $T = \frac{2\beta y_p - y_1 - y_2}{1+2\beta}$. The division of transfers will always be unequal unless $y_2 = y_1$. The indirect utility of a parent who intends to give unequal transfers is the following:

$$V_u = (1 + 2\beta) \ln\left(\frac{y_1+y_2+y_p}{1+2\beta}\right) + 2\beta \ln(\beta) \quad (3)$$

If the parent favours equal division (with $p=0.5$), then the indirect utility will become:

$$V_e = \ln\left(\frac{y_1+y_2+y_p}{1+2\beta}\right) + \beta \ln\left(\frac{y_1-y_2+4\beta y_1+2\beta y_p}{2(1+2\beta)}\right) + \beta \ln\left(\frac{y_2-y_1+4\beta y_2+2\beta y_p}{2(1+2\beta)}\right) \quad (4)$$

It is not difficult to notice that $V_u - V_e > 0$ when $y_1 > y_2$ ². So, a parent who gives equal transfers must be an individual for whom the value of sticking to the norm of equal division compensates for the loss of utility embedded in the equal division decision. It will be assumed that the altruistic parent is also concerned with a norm of equal division and that this can be measured with a parameter $\gamma \in [0,1]$. Thus, the parent will make equal transfers only if:

$$V_e \geq (1 - \gamma)V_u \quad (5)$$

² It holds that $V_u - V_e = \ln\left(\frac{2\beta(y_1+y_2+y_p)}{y_1-y_2+4\beta y_1+2\beta y_p}\right) + \ln\left(\frac{2\beta(y_1+y_2+y_p)}{y_2-y_1+4\beta y_2+2\beta y_p}\right) > 0$ when $y_1 > y_2$.

If the norm of equal division does not matter ($\gamma=0$) the parent will choose unequal sharing of transfers. The parent will give equal transfers only if equation 5 holds, which will be the case for a large enough γ . A latent variable approach may help to clarify the parental dilemma about the division of transfers and outline the empirical strategy. Define a latent variable z^* such that the parent gives equal transfers if $z^* \geq 0$, otherwise transfers will be unequal.

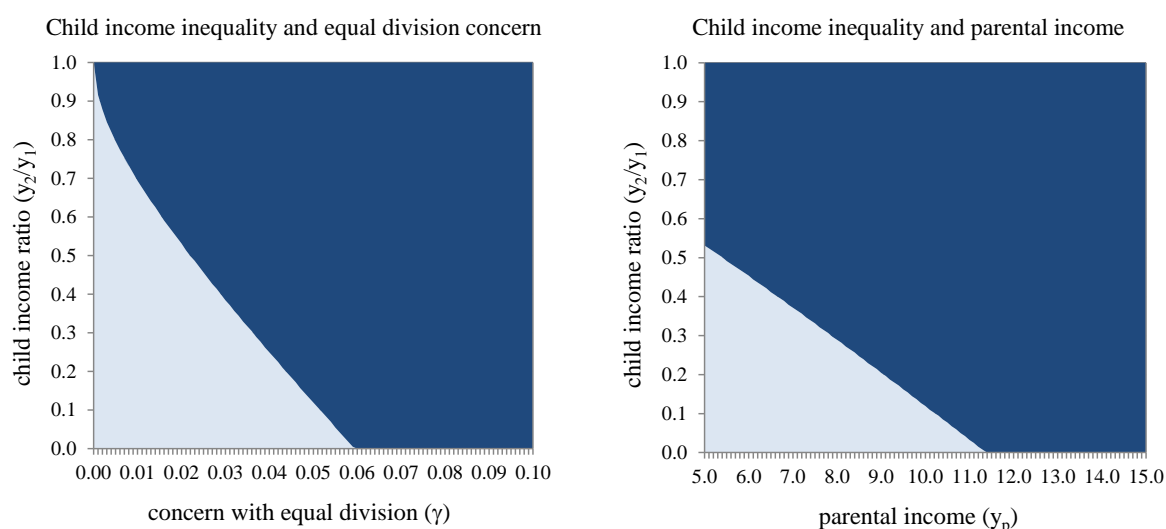
$$z^* = V_e - (1 - \gamma)V_u \quad (6)$$

The negative or positive value of the latent variable depends on the value of certain parameters and variables. It is clear that parents with a concern for equal division $\tilde{\gamma} \geq 1 - V_e/V_u$ will divide their transfers equally; otherwise, they will divide unequally. This means that a greater concern for the equal division norm will increase the probability of giving equal transfers. The key implication of this setting is that the latent variable diminishes when child income inequality increases. Given that $y_1 \geq y_2$, an increase in only child 1's income is equivalent to a rise in child income inequality. Finding a clear cut expression for $dz^*/dy_1 < 0$ is possible but tedious. Nonetheless, the effects of different values for variables and parameters on z^* can be highlighted by simulation. This is shown in Figure 1. The left hand side panel of Figure 1 shows the map of possible points of equal/unequal division of transfers for different combinations of child income inequality and γ values. Child income inequality is measured by means of the ratio y_2/y_1 , which is bounded between 0 and 1 given the assumption $y_1 \geq y_2$. A ratio closer to 1 indicates more equality, and a value closer to 0 indicates more inequality. All points in the darker colour area indicate that equal division is optimal – and hence chosen by the parent - for the corresponding pair of values in vertical and horizontal axes. It is observed that child income inequality reduces the occurrence of equal sharing, and that the concern for the equal division norm increases this. The right hand side panel of Figure 1 shows the effect of parental income on the occurrence of

equal division. This effect is positive because the loss of parental utility due to equal division is relatively less important for a wealthier parent.

In sum, this parent faces a trade-off. On the one hand, she wants to maximize her utility by giving unequal transfers according to her altruistic motives, i.e. giving larger transfers to poorer children. But on the other hand, the parent has regard for the equal division norm calling for equal distribution of transfers. The model therefore predicts that the probability of equal division of transfers is i) negatively associated with child income inequality, ii) positively associated with parental income, and iii) positively associated with a concern for equal division.

Figure 1. Existence of equal division in simulations



Note: points in the darker colour area indicate that equal division is optimal for the corresponding pair of values in vertical and horizontal axes. It is assumed that $\beta = 0.99$; $y_p = 10$; $y_2 = 2$ in the first panel, and $\beta = 0.99$; $y_2 = 2$; $\gamma = 0.05$ in the second panel.

3. Data

3.1 Data selection

The first two waves of the Survey of Health, Ageing, and Retirement in Europe (SHARE, release 2.6.0) provide the data needed to study the distribution of parental transfers. Only these waves are suitable for analyzing the equal/unequal division of transfers because they ask for the

exact amount of monetary inter-vivos transfers given to adult children³. This data has representative and comparable information from standardized surveys applied to respondents aged 50+ in Israel and 14 European countries: Austria, Germany, Sweden, The Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, Czech Republic, Poland and Ireland. The last three countries were added in the second wave. The interviews were conducted in 2004/2005 and 2006/2007 for the first and second waves, respectively (Ireland was included in 2008). The variables are at individual and household levels. In total and without any selection, the original dataset included 30,816 and 36,731 respondents in waves 1 and 2, respectively. In addition to standard demographic variables, this dataset includes key questions about financial transfers (larger than 250 Euros in the last 12 months) between parents and children⁴. More detailed information about SHARE can be found in Börsch-Supan *et al.* (2013). Specific methodological features of SHARE concerning financial transfers can be consulted in Emery and Mudrazija (2015).

The sample for analysis is composed of respondents with at least two children who gave at least one transfer to any child during the 12 months prior to the interview. The sample does not include the cases of respondents living with their children in the same household nor respondents with children aged less than 18 years. The reason, as mentioned in McGarry (1999), is that transfers to non-adult children might be due to legal obligations, and it is difficult to quantify the value of shared food and housing for co-resident children. Respondents with missing values in their own variables and children demographics are also omitted. In SHARE, demographic information of respondents' children is registered for up to four children, while the amount of the

³ Parents can also receive transfers from children but this is minimal. According to Albertini *et al.* (2007), only 3% of parents from the first wave of SHARE receive transfers from children, which contrasts with 21% of parents who give transfers to children.

⁴ Although transfers below 250 are not captured, this amount represents a small enough percentage of parental income in Europe so that the majority and more relevant transfers are recorded in the survey. This is a standard practice in other similar surveys like the Health and Retirement Study (HRS) and the Asset and Health Dynamics Study (AHEAD), which report transfers above US\$500.

financial transfer is recorded up to the third person that receives/gives it. Therefore, a further selection considers respondents who have at most three children (approximately 86% of respondents who fulfilled the previous selections had up to three children). Other observations to be dropped are the 3-children (or 2-children) parents who report at least one (or two) transfer to a person who is not a child. The reason is that it is not possible to know whether the unreported children received transfers or not⁵. The final sample size thus consists of a total of 3,826 observations, with 1,649 and 2,177 observations corresponding to wave 1 and 2. Given the longitudinal design of SHARE, it is important to mention that only 472 individuals are observed in both waves.

3.2 Child income

Similarly to other datasets based on middle-aged interviewees, the respondent's child income is not directly asked in SHARE. However, child income can be computed with the regression coefficients of earning equations estimated with an auxiliary dataset that contains the same child demographics available in SHARE. This is done with the European Union Statistics on Income and Living Conditions dataset (EU-SILC) for years 2005-2008⁶ whose reference period for income is 2004-2007. The log of gross hourly labour income of employees in full-time jobs and aged 18-65 is regressed against age, age square, marital status and education level by country and sex⁷. Other authors also impute earnings to solve the lack of information for either children or parents. For example, Cox (1987) and Cox and Jakubson (1995) assume that children and parents live near each other, so that they use the average income of the metropolitan areas where children

⁵ For example, the case of a parent with three children reporting transfers for two children and her own mother will be excluded because the recording of transfers is truncated to three recipients, and hence it is not possible to know if the unreported child received a transfer or not.

⁶ The log of gross hourly labour income of employees in full-time jobs (aged 18-65) is regressed against age, age square, marital status and education level, which are also measured in SHARE. The estimates are available from the author upon request.

⁷ In addition, a child in part-time occupation is assumed to work the average of hours specific to her country and sex. Unemployed children, and those looking after the home or in training are assumed to have zero income.

live to approximate parental income. McGarry (1999) uses the mid points of child income brackets, as reported by parents, to compute child income. Cox and Rank (1992) use earnings functions estimated with the same dataset that contains child information to impute parental income at the standardized age of 45. Although it would be desirable to correct the earnings equations for sample selection, there is not enough demographic information for children in SHARE. However, as suggested by Harmon *et al.* (2003) in their analysis on the returns of education in European countries, some sample bias could exist, but this appears to be small.

3.3 Variables and descriptive statistics

About one third of European parents give equal transfers, although there is considerable country variation (see Table 1). It is interesting to find distinctive groups such as the Nordic countries in the top of the ranking of equal-division parents and Mediterranean countries such as Greece and Spain in the bottom part. This reproduces well-established differences in welfare regimes and economic inequality to some extent. Table 2 shows the descriptive statistics of the variables of interest and hence used in the econometric analysis. The transfer amount is important for the child who receives this. The transfer to child income ratio is 22%. This ratio is larger in the case of children who receive unequal transfers (26%) than in that of children receiving equal transfers (18%). The variable *good health* takes value 1 if the respondent reports being at least in good health in a 5-scale subjective question on health, and 0 otherwise. The variable *top 20% wealth* takes value 1 if the respondent belongs to the first quintile of the distribution of net wealth in each country. Net wealth is used as an indicator of the relative economic situation of the household instead of household income because the measure of income is not comparable between waves 1 and 2. Gross household income was asked in wave 1, but in subsequent waves this was changed to net household income.

In SHARE, respondents must also report the main reason for giving each transfer. The question is “Please look at card 39. What was the main reason for this assistance or gift?: 1) to

meet basic needs, 2) to buy or furnish a house or apartment, 3) to help with a large item of expenditure (other than buying a house), 4) for a major family event (birth, marriage, other celebration), 5) to help with a divorce, 6) to help following a bereavement or illness, 7) to help with unemployment, 8) for further education, 9) to meet a legal obligation (e.g. alimony or compulsory payments for parents' care), 96) no specific reason, and 97) Other reason". Four groups can be distinguished according to these answers. *Motive 1* indicates the altruistic reason of helping to meet basic needs (item 1). *Motive 2* specifies that the transfer was given to help with a large expenditure such as a house, furniture, a wedding, education, etc. (items 2, 3, 4 and 8). *Motive 3* indicates that the parent does not have a specific reason for giving the transfer (item 96). *Motive 4* indicates insurance reasons such as helping with a divorce, illness, or unemployment (items 5, 6 and 7)⁸. Interestingly, 27% of parents who give unequal transfers mention altruistic reasons, while only 17% of parents who give equal transfers mention these reasons.

Given that the unit of analysis is the respondent, children variables are transformed in inequality measures for each respondent. Inequality is captured with the range, i.e. the difference between the highest and lowest value of the relevant variable among children. This transformation will help to assess the role of differences between children on the decision to give equal or unequal transfers. For example, differences in age and education across children can indicate differences in the position within the life-cycle and the level of permanent income, and therefore differences in financial needs. However, there are two exceptions. Child income inequality is measured using the ratio of lowest to highest income of children in the family (y_{min}/y_{max})⁹, which is bounded between 0 and 1 and hence can ease the interpretation of the econometric results. A value closer to one reveals more child income equality in the family, and a value closer to 0 indicates more

⁸ The item "97) Other reason" is not assigned to any motive. The Table A1 in the Appendix shows the detailed and complete distribution of motives reported by the parents.

⁹ This ratio is preferred to its inverse, otherwise this cannot be defined for the cases of zero income in the denominator. In addition, if all children have zero incomes, the ratio is equal to 1.

child income inequality. According to the theoretical framework, a positive relationship is expected between the probability of giving equal transfers and the ratio y_{min}/y_{max} . In order to account for potential evolutionary motives (Francesconi *et al.* 2015, Light and McGarry 2004), the analysis will include a dummy indicating that at least one child in the family is adopted or a stepchild. The variables *contact with parents* and *distance from parent's home* are useful to account for child services¹⁰. For example, Cox and Rank (1992) consider that the distance between child and parental home is a proxy for the provision of child services because services are more costly to offer when the child lives further from her parent's home. Under the exchange approach (Bernheim *et al.*, 1985; Cox, 1987), the parents “buy” services from children, paying with a transfer, and hence the children may end up receiving different amounts of transfers. Similarly, Leopold and Raab (2011) use a concept of short-time reciprocity to analyse the concurrent exchanges of money and time between old parents and adult children. This exchange is more likely to occur when parents are largely dependent and have enough financial means to transfer.

¹⁰ These variables are originally in brackets, but for the ease of presentation and analysis these variables are transformed in a linear variable by taking the midpoints of each bracket.

Table 2. Descriptive statistics

Variable	Unequal transfers		Equal transfers		Total		Mean diff (Uneq-Equal)
	mean	s.d.	mean	s.d.	mean	s.d.	
Parental characteristics							
Equal division of transfers [^]	0.000	0.000	1.000	0.000	0.363	0.481	
Male [^]	0.495	0.500	0.527	0.499	0.507	0.500	-0.032*
Married [^]	0.683	0.465	0.729	0.445	0.700	0.458	-0.046***
Age	65.040	9.176	65.176	9.234	65.089	9.196	-0.136
Good health [^]	0.333	0.472	0.397	0.489	0.357	0.479	-0.064***
Top 20% wealth [^]	0.261	0.439	0.303	0.460	0.276	0.447	-0.042***
Number of children	2.249	0.433	2.347	0.476	2.284	0.451	-0.098***
Motive 1 (altruistic reasons) [^]	0.272	0.445	0.174	0.379	0.237	0.425	0.099***
Motive 2 (large gifts) [^]	0.508	0.500	0.452	0.498	0.487	0.500	0.056***
Motive 3 (no spec. reasons) [^]	0.199	0.399	0.375	0.484	0.263	0.440	-0.176***
Motive 4 (insurance reasons) [^]	0.068	0.253	0.019	0.138	0.051	0.219	0.049***
Within children characteristics							
Income ratio (ymin/ymax)	0.520	0.364	0.580	0.335	0.542	0.355	-0.060***
Diff. in age	4.892	3.387	4.969	3.157	4.920	3.305	-0.077
Diff. in education levels	0.933	1.049	0.904	1.015	0.922	1.037	0.029
Diff. in number of children	1.088	1.110	1.060	1.132	1.078	1.118	0.028
Diff. in contact with parents (days/100)	1.034	1.167	0.899	1.088	0.985	1.141	0.135***
Diff. in distance from parent's home (km/100)	1.308	1.725	1.138	1.603	1.246	1.684	0.170***
At least one child is adopted	0.102	0.303	0.089	0.285	0.097	0.297	0.013
Transfers to children							
Total transfers (ppp-Euro)	4,520	15,825	6,716	23,300	5,317	18,909	-2195.4***
Mean of transfer (ppp-Euro)	4,216	13,447	3,532	11,571	3,872	12,543	683.8**
Transfer to child income ratio	0.215	0.657	0.159	0.452	0.185	0.558	0.057***
Observations	2,438		1,388		3,826		

[^] Indicates a dummy variable with values 0/1. *** indicates significance at 1%, ** at 5%, * at 10%.

The idea that altruism conflicts with the norm of equal division finds further support in the statistics reported in Table 3. It is found that only a reduced fraction of parents mentioning altruistic reasons (27%) or insurance reasons (14%) give equal transfers, while a larger share of parents who do not provide specific reasons give equal transfers (52%). Furthermore, it is observed that parents who give transfers out of altruistic reasons face more child income inequality (mean ratio=0.49) than parents with no specific reasons (mean ratio=0.58). The other statistics in Table 3 do not seem to differ much as regards transfer motives.

Table 3. Means of selected variables by motives for transfers

Variable	Motive 1 (altruistic reasons)	Motive 2 (large gifts)	Motive 3 (no spec. reasons)	Motive 4 (insurance reasons)
Equal division of transfers	0.27	0.34	0.52	0.14
Top 20% wealth	0.27	0.30	0.28	0.28
Income ratio (ymin/ymax)	0.49	0.54	0.58	0.51
Diff. in contact with parents (days/100)	0.98	0.96	0.96	1.01
Diff. in distance from parent's home (km./100)	1.28	1.21	1.23	1.19
At least one child is adopted	0.11	0.10	0.09	0.11

4. Econometric results

4.1 Empirical strategy

The analysis of the determinants of the probability of giving equal transfers is performed with logit regression models and estimated with maximum likelihood. The unit of analysis is the respondent and the sample consists of the two pooled waves of SHARE as defined earlier (n=3826). In terms of the latent variable z_{it}^* , the model can be expressed as:

$$z_{it}^* = X_{it}\beta + v_{it} \quad ; \quad t = 1,2 \quad z_{it} = \begin{cases} 1 & \text{if } z_{it}^* > 0 \\ 0 & \text{if } z_{it}^* \leq 0 \end{cases} \quad (7)$$

The dependent variable takes the value of 1 if the parents give equal transfers to all their children, and 0 otherwise. Posit a parent who decides to divide their transfers equally or unequally by taking into account the differences among their children. Vector X_{it} contains these variables and some parental demographics as defined in section 3.3, and v_{it} is the error term. Given the longitudinal design of SHARE, the error term of equation 7 could be treated as a composite error $v_{it} = c_i + u_{it}$ formed by the unobserved effect c_i and the idiosyncratic error u_{it} , and panel data methods could be applied to account for unobserved heterogeneity. Although there are only 472

individuals observed in both waves, random effects are still an option to check whether the estimates hold after controlling for heterogeneity. However, it is not meaningful to apply a fixed effects model because the sample of observations with varying values in the dependent variable between both waves is very small (only 147) in comparison with the full sample.

4.2 Main results

Table 4 shows the results for the probability of making equal transfers. The first two columns report the results of a pooled logit model, first without entering the motives for giving transfers mentioned by the parents, and then entering these variables. The last column reports the results of a logit model with random effects. As regards parental characteristics, it is observed that parents who are married, richer and have more children have a higher probability of giving equal transfers. The positive relationship between parental affluence and equal division of transfers is in line with the theoretical model predictions. The dilemma between giving equal transfers and behaving more altruistically (dividing unequally) is less important for wealthier parents as they can better tolerate the loss of utility associated with equal division. The positive relationship between the number of children and equal division may be somewhat surprising. A larger number of children may imply a larger variation in their needs and positions within the life-cycle, so that it will be more difficult for parents to give equal transfers within their budget constraints. Hochguertel and Ohlsson (2009) find a negative relationship between equal sharing of transfers and number of children in the HRS, though their sample differs considerably from the one employed in this paper¹¹. In addition, McGarry (1999) finds a statistically significant and negative relationship between the number of children and the probability of giving equal transfers in her HRS sample but not with her AHEAD sample. It is difficult to be conclusive on why equal sharing is positively related with the number

¹¹ The sample in this paper is composed only of parents with two or three children and conditional on the existence of at least one transfer. This means that a parent with zero transfers to each child is not treated as an equal divider, simply because they are not included in the sample.

of children, but it should be pointed that the sample only includes two-child and three-child parents because of data limitations. The results might have been different if it had been possible to include parents with more children.

The key result of the regressions is the positive association between the ratio of child incomes y_{min}/y_{max} and the probability of giving equal transfers. Recall that this ratio measures income equality between the children (a ratio closer to 0 means more inequality and a ratio closer to 1 means more equality), so higher child income inequality is negatively related to the likelihood of giving equal transfers, as highlighted in the theoretical model. The variables measuring differences in *contact with parents* and *distance from parent's home* are negative and significant. This means that the parents care, to some extent, about the differences in services provided by their children at the moment they decide between equal and unequal transfers. Therefore, the probability of giving equal transfers decreases when the differences in the child's provision of services becomes too large. In the case of *distance from parent's home*, it is expected that a child living closer to the parent can offer more services, and that the parent positively values the proximity of the child. Although the exact motive of the child to live close to the parent is not certain, the influencing factor in the decision regarding equal transfers is the difference in distance among siblings.

Once the parent's motives for giving transfers are introduced (column 2 of Table 4), the results basically do not change. The key finding about the relationship between child income inequality and equal division is practically unaffected. The coefficient keeps its significance, but the size slightly decreases from 0.112 to 0.098. Interestingly, parents who express altruistic reasons have a lower probability of giving equal transfers, which supports the assumption that altruism rivals equal division. Large financial gifts are also associated with the reduction of the probability of equal division. Due to budget constraints, it will be difficult for the parents to give the same large amount to each child. In line with the altruistic reasons mentioned above, the parents mentioning insurance reasons (help with a divorce, illness, or unemployment) are also less

likely to give equal transfers. Contrary to the previous effects of reported motives of parents, the probability of giving equal transfers is positively associated with parents who report no specific reasons for giving transfers. Such a case is close to a situation of a “pure” financial gift with no strings attached. In such a case, equal division prevails.

Two further effects are worth mentioning. The effect of the difference in the number of grandchildren on equal division is negative and significant. A child with a larger family has more expenses to cope with and hence could receive larger transfers from an altruistic parent. Therefore, having more differences in the number of grandchildren reduces the likelihood of parents giving equal transfers. The other effect is the negative impact of having adopted children in the family on the decision to give equal transfers. The probability of dividing transfers equally decreases by 7% when the respondent has at least one adopted child. This negative relationship has also been found in bequest divisions in Light and McGarry (2004). Likewise, Francesconi *et al.* (2015) find that a stepchild in the family is associated with a higher probability of an unequal division of estates. These last authors argue that, apart from exchange and altruism, parents can be driven by evolutionary motives in their transfer behaviour, and hence they will favour biological over non-biological children. After controlling for heterogeneity with the random effects model it is observed that the results are practically unaffected.

Table 4. Logit marginal effects of the probability of equal transfers

Variable	(1)		(2)		(3) random effects	
	dF/dx	s.e.	dF/dx	s.e.	dF/dx	s.e.
Parental characteristics						
Male	0.018	(0.017)	0.018	(0.019)	0.020	(0.019)
Married	0.041*	(0.022)	0.043**	(0.021)	0.054**	(0.021)
Age	0.149	(0.101)	0.029	(0.107)	0.045	(0.104)
Good health	0.021	(0.019)	0.019	(0.020)	0.024	(0.020)
Top 20% wealth	0.032***	(0.010)	0.031***	(0.011)	0.040***	(0.013)
Number of children	0.191***	(0.035)	0.194***	(0.036)	0.242***	(0.044)
Within children characteristics						
Income ratio (ymin/ymax)	0.112***	(0.033)	0.098**	(0.038)	0.119***	(0.041)
Diff. in age	-0.007	(0.004)	-0.006	(0.004)	-0.007**	(0.004)
Diff. in education levels	-0.009	(0.011)	-0.009	(0.011)	-0.010	(0.010)
Diff. in number of children	-0.024**	(0.011)	-0.027***	(0.010)	-0.033***	(0.011)
Diff. in contact with parents (days/100)	-0.029***	(0.006)	-0.028***	(0.006)	-0.033***	(0.006)
Diff. in distance from parent's home (km./100)	-0.024***	(0.004)	-0.024***	(0.005)	-0.030***	(0.005)
At least one child is adopted	-0.073***	(0.024)	-0.070***	(0.025)	-0.082***	(0.020)
Motives to make transfers						
Motive 1 (altruistic reasons)			-0.108***	(0.020)	-0.118***	(0.022)
Motive 2 (large gifts)			-0.042*	(0.025)	-0.050**	(0.023)
Motive 3 (no spec. reasons)			0.144***	(0.022)	0.183***	(0.025)
Motive 4 (insurance reasons)			-0.234***	(0.024)	-0.235***	(0.024)
pseudo R ²	0.065		0.099			
number of observations	3826		3826		3826	

Regressions include dummy variables for country and wave. Robust clustered (by country) standard errors are in parenthesis. *** indicates significance at 1%, ** at 5%, * at 10%.

4.3 Additional checks

The sample was selected to include only respondents with up to three children because the survey only registers up to three persons receiving financial transfers. The results do not change considerably if the regressions are applied separately to samples of parents with two and three children. The variable of interest, namely the child income ratio, maintains its direction and significance. For example, the marginal effect found in the first model of Table 4 become 0.1056 ($s.e.=0.0385$) and 0.1116 ($s.e.=0.0343$) in the sample of parents with two and three children, respectively. Equal transfers could be underestimated if unequal transfers are very similar under different “windows” in the value of the transfers given to each child. For example, Hochguertel

and Ohlsson (2009) report different estimates of equal division by allowing an absolute deviation of 20% from the intra-family mean of each transfer received by siblings; Wilhelm (1996) allows a variation of $\pm 2\%$. In the sample analysed in this paper, there are no important changes in the frequency of equal transfers if a large window of 20% of the intra-family transfer mean is allowed. In this case, the frequency of equal transfers increases from 36.3% to 37.4%. The use of this new dependent variable in the first regression model of Table 4 does not change the direction and significance of the coefficient for child income ratio, although there is an increase in the size of the effect to 0.1349 (*s.e.*=0.0285).

The analysis employs the child income ratio y_{min}/y_{max} as a measure of the degree of income inequality among children. The use of two other inequality measures, the range and the square of the coefficient of variation, also provides support for a negative relationship between child income inequality and the probability of giving equal transfers. Among these two measures, the squared coefficient of variation is better established in the empirical literature as this belongs to the family of additive and decomposable inequality measures (Shorrocks, 1980). Similarly, Light and McGarry (2004) use the coefficient of variation of child income as a child income inequality measure. Table 5 reports negative and statistically significant coefficients for these inequality measures when model 1 of Table 4 is used as the baseline. These results (direction and statistical significance) are also maintained when models 2 and 3 of Table 4 are used instead.

Table 5. Marginal effect of alternative measures of child income inequality

Variable	dF/dx	mean
Child income ratio (y_{min}/y_{max})	0.112*** (0.033)	0.542
Child income range ($y_{max} - y_{min}$)	-0.056*** (0.014)	0.770
Squared coefficient of variation	-0.111*** (0.025)	0.251

Each cell contains the coefficient of a regression with a different child income inequality variable. The models are similar to model 1 of Table 4. *** indicates significance at 1%, ** at 5%, * at 10%.

5. The role of country-level variables

Research on the role of contextual variables on family transfers have established the importance of taking into account these variables to better explain observed differences across countries. For example, different types of welfare state regimes (Esping-Andersen, 1990) may have a different influence on the relationship between old parents and adult children by providing different forms and intensity of old age care (Künemund and Rein, 1999) and minimum income guarantees (Brandt *et al.*, 2009; Brandt and Deindl, 2013). It is not only macro variables related to the welfare state can shed light on the different patterns of equal division, but also cross-country differences in attitudes and values. Table 6 contains some of these variables that have a potential influence on the variation of transfer divisions by country. In particular, a score for altruism in the country is computed with a question included in the World Values Survey (WVS) and the European Social Survey (ESS)¹². Interestingly, the correlation between average altruism and the frequency of equal division in the country is negative (-0.182), which is in line with the previously highlighted tension between equal division and altruism.

¹² This is a question to obtain the Schwartz value of benevolence associated with altruism. The question is as follows: “Tell me how much each person is or is not like you: It's very important to her/him to help the people around her/him. She/he wants to care for their well-being”. The recoded scale ranges from 6 (very much like me) to 1 (not like me at all), and hence, a higher score means more altruism.

Table 6. Variables at the country level (circa 2006)

Country	Frequency of equal transfers (%)	Altruism	Mandatory expenditures in pensions (%GDP)	Mandatory and voluntary expenditures in pensions (%GDP)	Gini of disposable income	Gini of market income	Redistribution (Gini mkt inc / Gini disp inc)	Inheritance tax rate (min)	Inheritance tax rate (max)	Inheritance tax rate (average)
Austria	32.14	4.80	10.85	11.38	25.30	45.00	1.78	2.00	15.00	8.50
Germany	27.27	4.78	8.96	9.73	26.80	55.20	2.06	7.00	30.00	18.50
Sweden	49.26	4.52	9.20	11.25	24.00	43.20	1.80	0.00	0.00	0.00
Netherlands	35.26	4.81	5.36	8.95	26.40	44.20	1.67	5.00	27.00	16.00
Spain	20.00	4.83	6.48	6.48	31.90	45.60	1.43	7.65	34.00	20.83
Italy	36.72	4.96	12.75	12.97	32.10	47.90	1.49	0.00	0.00	0.00
France	38.48	4.59	11.06	11.14	27.30	50.70	1.86	5.00	40.00	22.50
Denmark	45.02	4.92	7.39	9.50	23.70	44.20	1.86	2.10	2.10	2.10
Greece	15.99	5.15	9.94	10.32	34.30	48.90	1.43	1.00	1.00	1.00
Switzerland	35.53	4.94	11.54	11.56	30.40	46.50	1.53	0.00	0.00	0.00
Belgium	43.73	4.89	7.27	10.54	27.80	48.70	1.75	3.00	30.00	16.50
Czech Rep.	35.93	4.34	6.95	6.95	25.30	45.20	1.79	0.00	0.00	0.00
Poland	22.12	4.71	9.39	9.39	33.30	53.00	1.59	3.00	7.00	5.00
Ireland	18.42	5.08	2.92	3.83	31.90	48.50	1.52	20.00	20.00	20.00
United States	9.23	4.52	5.24	9.31	38.00	48.60	1.28	18.00	55.00	36.50

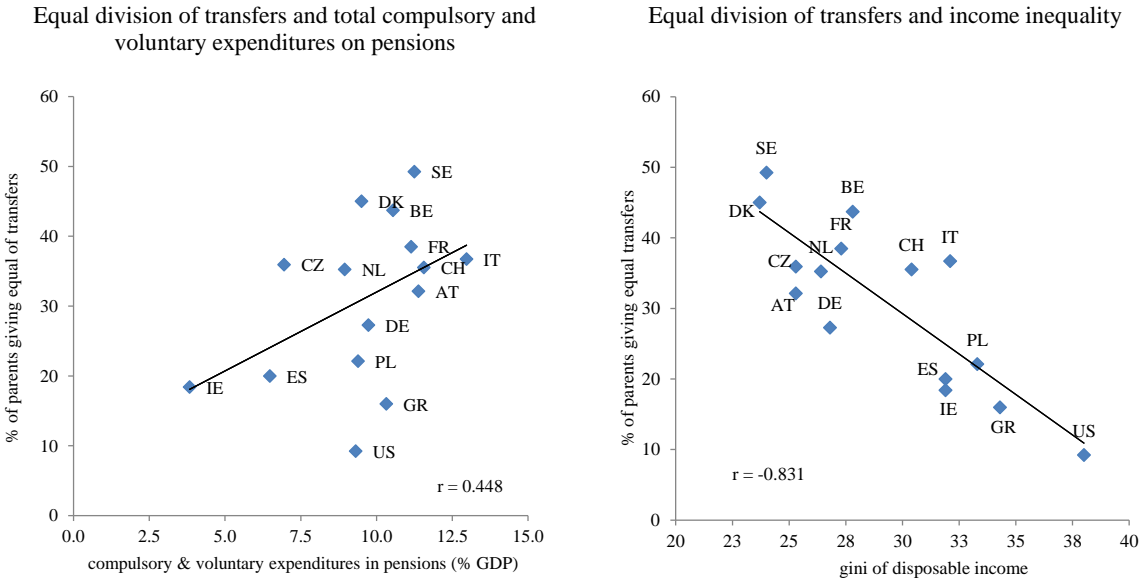
Note: The frequency of equal transfers for the US is inferred from Hochguertel and Ohlsson (2009). The score for altruism is computed for 50+ individuals from the question “tell me how much each person is or is not like you: It's very important to her/him to help the people around her/him. She/he wants to care for their well-being” (available in the ESS/2004 and WVS/2006). The recoded scale ranges from 6 (very much like me) to 1 (not like me at all), and hence, a higher score means more altruism. The gini coefficients come from Eurostat for Europe and OECD for the US, circa 2006. Pension data is drawn from the OECD social expenditure database. Mandatory expenditures in pensions correspond to private and public expenditure in old-age benefits as % of GDP for the year 2006; and voluntary expenditures correspond to voluntary private expenses in old-age benefits. Czech Republic and Poland have not data available for voluntary expenses. Inheritance tax rates correspond to direct heirs (spouse and children) and are drawn from the CESifo-DICE report "Inheritance Taxation, General Characteristics, 2007". The tax rate information for direct heirs in Poland and Greece comes from the 2013 report.

According to the econometric results showing that wealthier parents are more likely to give equal transfers, it could be the case that parents from countries with more generous pension regimes are in a better position to divide their transfers equally. Indeed, this is observed when the percentage of parents giving equal transfers in the country is plotted against total pension expenditures (see left panel of Figure 2). The correlation between the frequency of equal division and pension expenditures is larger if both mandatory and voluntary pensions are included in pension expenditures ($r=0.448$). If only mandatory pensions were included, the correlation had been 0.343. This reflects the importance of voluntary pension plans in some countries. The variable that shows the clearest relation with the division of transfers is the Gini index of disposable incomes (see right panel of Figure 2). These variables report a large correlation of -0.831. Parents living in more egalitarian countries are more likely to equally divide their transfers. This pattern suggests that the outcome of equal division is more likely when child income differences are also lower. In addition, the degree of redistribution implemented in the country - measured as the Gini of market income to Gini of disposable income ratio - is positively related to the share of equal transfers ($r=0.654$). It seems that the effort of the government to redistribute incomes in the country reduces somewhat the need for parents to make compensatory transfers to their children.

Another variable with potential influence on the division of transfers is the level of taxation on bequests. In countries with high inheritance taxes, parents may prefer to substitute bequests with inter-vivos transfers in order to reduce the tax burden. Therefore, it will be interesting to explore whether this substitution effect has any consequence for the way parents divide inter-vivos transfers. The correlation between equal division of transfers and the average inheritance tax rate in the country is strong and negative ($r=-0.498$), although it is not obvious how to interpret this relationship. On the one hand, one could expect that parents with a strong concern for the norm of equal division will distribute their estates equally in advance by making equal inter-vivos

transfers. On the other hand, inter-vivos transfers are easier to hide than bequests from one child to another and therefore parents may exploit this feature to give unequal transfers and prevent, for example, jealousy on the part of children or as a repayment for a child’s service. In any case, the negative relationship between equal division of transfers and inheritance tax is closer to the latter reason.

Figure 2. Equal division of transfers, pension expenditures and income inequality



The relationship between equal division and macro variables is better tested in the framework of previous logit model regressions. For this, the country dummies included in the models derived from equation 7 must be replaced by variables at the country level. The results of these new regressions are reported in Table 7. In general, it is observed that the coefficients, statistical significance and directions of the variables at the respondent level basically do not change. In particular, the effect of child income inequality on equal division is unaffected. Only one macro variable is introduced in each of the first four models of Table 7, and then all of them are added to the model in the last column. It is observed that income inequality in the country reduces the

probability of giving equal transfers. Larger pension expenditures increase the likelihood of equal division only once the other macro variables are also included (last column of Table 7). An interesting outcome, one which confirms the theoretical model and previous econometric results, is the negative and significant relationship between equal division and the level of altruism in the country. Furthermore, it is observed that inheritance taxes reduce the probability of equal division when the other macro variables are also included in the model. In terms of size effects (last model of Table 7), 1-percentage point increase in the Gini index will decrease the probability of equal division by 2.2%, while an extra percentage point in the pension expenditures to GDP ratio will increase the probability of equal division by 2.8%. In the case of the score of societal altruism (bounded between 1 and 6 with mean 4.79), one extra point in the score will reduce the probability of giving equal transfers by 11.8%. Furthermore, a 1-percentage-point change in inheritance taxes reduces the probability of equal division slightly by 0.2%. In sum, country variables provide evidence that parents are in a better position to care about equal division when incomes are more equally distributed in the country, pension benefits are larger, altruism is less strong and inheritances taxes are lower.

Table 7. Logit marginal effects of the probability of equal transfers

Variable	(1)		(2)		(3)		(4)		(5)	
	dF/dx	s.e.	dF/dx	s.e.	dF/dx	s.e.	dF/dx	s.e.	dF/dx	s.e.
Country level variables										
Gini index of disposable income	-0.024***	(0.006)							-0.022***	(0.004)
Total pension expenditure in pensions			0.014	(0.014)					0.025***	(0.006)
Altruism					-0.305**	(0.127)			-0.118***	(0.036)
Inheritance tax rate							-0.002	(0.003)	-0.002**	(0.001)
Parental characteristics										
Male	0.015	(0.018)	0.011	(0.015)	0.016	(0.019)	0.013	(0.016)	0.018	(0.019)
Married	0.047**	(0.023)	0.045*	(0.024)	0.044**	(0.022)	0.044*	(0.023)	0.045**	(0.022)
Age/100	0.025	(0.098)	-0.033	(0.126)	0.023	(0.103)	-0.035	(0.119)	0.002	(0.102)
Good health	0.031	(0.025)	0.051**	(0.022)	0.053***	(0.020)	0.047***	(0.018)	0.024	(0.021)
Top 20% wealth	0.030***	(0.012)	0.033***	(0.012)	0.030**	(0.012)	0.035***	(0.011)	0.034***	(0.011)
Number of children	0.196***	(0.036)	0.193***	(0.035)	0.192***	(0.034)	0.195***	(0.034)	0.200***	(0.035)
Within children characteristics										
Income ratio (ymin/ymax)	0.107***	(0.040)	0.120***	(0.037)	0.111***	(0.034)	0.117***	(0.036)	0.106***	(0.038)
Diff. in age	-0.006	(0.004)	-0.004	(0.004)	-0.005	(0.004)	-0.004	(0.004)	-0.007*	(0.004)
Diff. in education levels	-0.009	(0.011)	-0.007	(0.011)	-0.009	(0.011)	-0.007	(0.010)	-0.008	(0.011)
Diff. in number of children	-0.024***	(0.009)	-0.019**	(0.010)	-0.023**	(0.009)	-0.019**	(0.009)	-0.025***	(0.010)
Diff. in contact with parents (days/100)	-0.028***	(0.006)	-0.026***	(0.006)	-0.029***	(0.007)	-0.026***	(0.006)	-0.028***	(0.006)
Diff. in distance from parent's home (km./100)	-0.022***	(0.005)	-0.020***	(0.005)	-0.022***	(0.005)	-0.019***	(0.005)	-0.025***	(0.005)
At least one child is adopted	-0.062**	(0.025)	-0.033	(0.026)	-0.047*	(0.028)	-0.034	(0.028)	-0.067***	(0.025)
Motives to make transfers										
Motive 1 (altruistic reasons)	-0.109***	(0.022)	-0.123***	(0.023)	-0.120***	(0.023)	-0.123***	(0.023)	-0.112***	(0.022)
Motive 2 (large gifts)	-0.052*	(0.027)	-0.054*	(0.030)	-0.057**	(0.027)	-0.054*	(0.030)	-0.049**	(0.024)
Motive 3 (no spec. reasons)	0.152***	(0.024)	0.143***	(0.026)	0.152***	(0.023)	0.146***	(0.026)	0.148***	(0.022)
Motive 4 (insurance reasons)	-0.235***	(0.025)	-0.236***	(0.025)	-0.238***	(0.026)	-0.238***	(0.024)	-0.233***	(0.028)
pseudo R ²	0.090		0.073		0.083		0.073		0.095	
number of observations	3826		3826		3826		3826		3826	

Regressions include a dummy for wave. Robust, clustered (by country) standard errors are in parentheses. *** indicates significance at 1%, ** at 5%, * at 10%.

6. Conclusion

Approximately 36% of parents drawn from a sample of 14 European countries divide their transfers equally, although there is important cross-country variation (from 16% in Greece to 49% in Sweden). The high frequency of equal division in Europe contrasts with the results of previous studies - mostly based on US data - that report about 6%-9% of parents giving equal transfers. The present study argues that altruistic parents are concerned with the equal division of transfers to different extents and hence they do not offset child income inequality as predicted by the standard altruistic model of family transfers. Indeed, the theoretical model presented in Section 2 highlights the tension between being altruistic towards children (i.e., giving larger transfers to poorer children) and following a norm of equal division. The hypothesis that child income inequality rivals with the decision of giving equal transfers is supported by the econometric results under different model specifications and robustness checks. The key finding is that the likelihood of giving equal transfers is negatively associated with greater child income inequality. Moreover, the econometric results also suggest that other motivations play a role in the decision to make equal transfers. Exchange motives are in place because parents care, to some extent, about the differences in services provided by their children (measured by differences in a child's contact with parents and their distance from a parent's home) at the moment of deciding between equal and unequal transfers. Evolutionary motives are also revealed by the negative effect of having an adopted or stepchild on the probability of giving equal transfers.

In addition, variables at the level of the country shed light on the reasons for differences between countries with respect to the division of transfers. For example, different welfare state regimes provide different forms and intensity of old age care and social protection and therefore they may have different effects on inter-generational relationships, including inter-vivos transfers and child services. In particular, this paper shows that the probability of giving equal transfers is

positively affected when pension expenditures are larger, incomes are more equally distributed in the country, the level of societal altruism is less strong and inheritances taxes are lower. A broader future research agenda may focus on the study of the distribution of transfers and other inter-generational outcomes by extending the analysis of the role of different types of contextual variables in cross-country differences.

Acknowledgements

I would like to thank the comments and suggestions made by Erik Schokkaert, two anonymous referees, seminar participants at KU Leuven, Université Catholique de Louvain and Ghent University, and participants at the meetings of the Population Association of America, European Society for Population Economics, European Economic Association and Society for the Study of Economic Inequality. The author takes sole responsibility for the analysis carried out in this study.

This paper uses data from SHARE Waves 1, 2, 3 (SHARELIFE), 4 and 5 (DOIs: 10.6103/SHARE.w1.260, 10.6103/SHARE.w2.260, 10.6103/SHARE.w3.100, 10.6103/SHARE.w4.111, 10.6103/SHARE.w5.100), see Börsch-Supan *et al.* (2013) for methodological details. The SHARE data collection has been primarily funded by the European Commission through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812) and FP7 (SHARE-PREP: N°211909, SHARE-LEAP: N°227822, SHARE M4: N°261982). Additional funding from the German Ministry of Education and Research, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

References

- Albertini, M., Kohli, M., Vogel, C. 2007. Intergenerational transfers of time and money in European families: common patterns - different regimes?. *Journal of European Social Policy* 17 (4), 319-334.
- Andreoni, J., Bernheim, B.D. 2009. Social image and the 50-50 norm: a theoretical and experimental analysis of audience effects. *Econometrica* 77 (5), 1607–1636.
- Arrondel, L., Masson, A. 2006. Altruism, exchange or indirect reciprocity: what do the data on family transfers show?, in: Kolm, S.C., Mercier-Ytier, J.(Eds.), *Handbook on the Economics on Giving, Reciprocity and Altruism* (North Holland).
- Barro, R.J. 1974. Are government bonds net wealth?. *Journal of Political Economy* 82, 1095-1117.
- Becker, G.S. 1974. A theory of social interactions. *Journal of Political Economy* 82, 1063-1093.
- Bernheim, B.D., Shleifer, A., Summers, L.H. 1985. The strategic bequest motive. *Journal of Political Economy* 93, 1045-1076.
- Bernheim, B.D., Severinov, S. 2003. Bequests as Signals: An Explanation for the Equal Division Puzzle. *Journal of Political Economy* 111, 733–764.
- Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S., Zuber, S. 2013. Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). *International Journal of Epidemiology*. 42(4), 992-1001.
- Brandt, M., Haberkern, K. and Szydlik, M. 2009. Intergenerational help and care in Europe. *European Sociological Review* 25 (5), 585-601.
- Brandt, M. and Deindl, C. 2013. Intergenerational transfers to adult children in Europe: Do social policies matter?. *Journal of Marriage and Family* 75 (1), 235–51.
- Camerer, C., Fehr, E. 2004. Measuring Social Norms and Preferences Using Experimental Games: A Guide for Social Scientists, in: Henrich, J., Boyd, R., Bowles, S., Gintis, H., Fehr, E.,

- McElreath, R. (Eds.), *Foundations of Human Sociality - Experimental and Ethnographic Evidence from 15 Small-Scale Societies*, Oxford University Press.
- Cigno A., Pestieau P., Reesz, Z.R. 2011. Introduction to the symposium on taxation and the family. *CESifo Economic Studies* 57(2), 203-215.
- Cox, D. 1987. Motives for private income transfers. *Journal of Political Economy* 95, 508-46.
- Cox, D., Rank, M.R. 1992. Inter-vivos transfers and intergenerational exchange. *Review of Economics and Statistics* 74 (2), 305-314.
- Cox, D., Jakubson, G. 1995. The connection between public transfers and private interfamily transfers. *Journal of Public Economics* 57, 129-167.
- Cox, D., Fafchamps, M. 2008. Extended family and kinship networks: economic insights and evolutionary directions, in *Handbook of Development Economics*, Volume 4 (North Holland).
- Cremer H., P. Pestieau, P. 1996. Bequests as heir ‘discipline device’. *Journal of Population Economics* 9 (4), 405–414.
- Cremer H., Pestieau, P. 2011. The Tax Treatment of Intergenerational Wealth Transfers. *CESifo Economic Studies* 57(2), 365-401.
- Esping-Andersen, G. 1990. *Three worlds of welfare capitalism*. Oxford, UK: Polity Press.
- Emery, T., Mudrazija, S. 2015. Measuring intergenerational financial support: Analysis of two cross-national surveys. *Demographic Research* 33, 951-984.
- Fehr, E., Schmidt, H. 2002. Theories of Fairness and Reciprocity - Evidence and Economic Applications, in: Dewatripont, M., Hansen, L., Turnovsky S.J. (Eds.), *Advances in Economics and Econometrics - 8th World Congress, Econometric Society Monographs*, Cambridge University Press.
- Francesconi, M., Pollak, R.A., Tabasso, D. 2015. Unequal Bequests. NBER Working Paper 21692, October 2015.

- Halvorsen, E. and Thoresen, T.O. 2011. Parents' Desire to Make Equal Inter Vivos Transfers. *CESifo Economic Studies* 57 (1), 121-155.
- Harmon, C., Oosterbeek, H., Walker, I. 2003. The Returns to Education: Microeconomics. *Journal of Economic Surveys* 17 (2), 115-156.
- Hochguertel, S., Ohlsson H. 2009. Compensatory *inter vivos* gifts. *Journal of Applied Econometrics* 24, 993-1023.
- Künemund, H., Rein, M. 1999. There is more to receiving than needing: theoretical arguments and empirical explorations of crowding in and crowding out. *Ageing and Society* 19 (1), 93–121.
- LaFerrère, A., Wolff, F.C. 2006. Microeconomic models of family transfers, in: Kolm, S.C., Mercier-Ytier, J. (Eds.), *Handbook on the Economics on Giving, Reciprocity and Altruism* (North Holland).
- Laitner J. 1997. Intergenerational and inter-household economic links, in: *Handbook of Population and Family Economics*, Vol. 1A, Rosenzweig M.R., Stark. O. (Eds.), North-Holland: Amsterdam; 189-238.
- Leopold, T., Raab, M. 2011. Short-Term Reciprocity in Late Parent-Child Relationships. *Journal of Marriage and Family* 73, 105-119.
- Light, A., McGarry, K. 2004. Why parents play favourites: explanations for unequal bequests. *American Economic Review* 94 (5), 1669-1681.
- Lundholm, M., Ohlsson, H. 2000. Post mortem reputation, compensatory gifts and equal bequests. *Economics Letters* 68, 165-171.
- McGarry, K. 1999. Inter vivos transfers and intended bequests. *Journal of Public Economics* 73, 321-351.
- McGarry, K., Schoeni, R. 1995. Transfer Behavior in the Health and Retirement Study: Measurement and the Redistribution of Resources within the Family. *The Journal of Human Resources* 30 (0), S184-S226, Special Issue.

- Norton, E.C. and Van Houtven, C.H. 2006. Inter-vivos Transfers and Exchange. *Southern Economic Journal* 73 (1), 157-172.
- Pestieau P. 2003. The role of gift and estate transfers in the United States and in Europe, in: *Death and Dollars: The Role of Gifts and Bequests in America*, Munnell A.H., Sunden, A. (Eds.). Brookings: Washington, DC; 64-85.
- Shorrocks, A.F. 1980. The Class of Additively Decomposable Inequality Measures. *Econometrica* 48 (3), 613-625.
- Tomes, N. 1981. The family, inheritance and the intergenerational transmission of inequality. *Journal of Political Economy* 89 (5), 928–958.
- Wilhelm, M.O. 1996. Bequest behavior and the effect of heir's earnings: Testing the altruistic model of bequests. *American Economic Review* 86, 874-892.

Appendix

Table A1. Total distribution of parental motives to give financial transfers

	Unequal transfers		Equal transfers		Total	
	N	%	N	%	N	%
1) to meet basic needs	798	23.0	401	13.4	1,199	18.5
2) to buy or furnish a house or apartment	410	11.8	321	10.7	731	11.3
3) to help with a large item of expenditure (other than housing)	381	11.0	301	10.1	682	10.5
4) for a major family event (birth, marriage, other celebration)	492	14.2	428	14.3	920	14.2
5) to help with a divorce	45	1.3	6	0.2	51	0.8
6) to help following a bereavement or illness	41	1.2	8	0.3	49	0.8
7) to help with unemployment	89	2.6	15	0.5	104	1.6
8) for further education	278	8.0	135	4.5	413	6.4
9) to meet a legal obligation (e.g. alimony or compulsory payments for parents' care)	37	1.1	12	0.4	49	0.8
96) no specific reason	617	17.8	1,060	35.4	1,677	25.9
97) other reason	284	8.2	307	10.3	591	9.1
Total	3,472	100.0	2,994	100.0	6,466	100.0

Note: This table reports the total number of responses given by parents in the SHARE's sample of analysis to the question: "Please look at card 39. What was the main reason for this assistance or gift?". Therefore, the figures do not necessarily coincide with those of Table 2 in the main text.

