

Between Children and Friends Financial Solidarity of Family and Friends in the Netherlands

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Abstract

People give and receive financial transfers both to their children and friends. This raises the question whether financial transfers to and from family and friends are related. Are people more likely to give to their friends if they give less to their children? Or, are people who receive money from one relation also more likely to receive money from others? And, does the relationship with friends change when people have children? In this paper we explore the simultaneity of the transfers to and from children and friends to improve our understanding of the motives for financial solidarity. To this aim we use data from Netherlands Kinship Panel Study 2005 in which respondents (here called anchors), reported the transfers with their children and friends. We first relate the likelihood of financial transfers to individual characteristics of both the anchor and respective donors or beneficiaries, and secondly investigate the correlations between each pairs of transfers for the main sample and different sub-groups.

Our findings suggest that there exist a strong correlation between transfers to or from both children. A similar though weaker correlation is found when comparing relationships with children and friends simultaneously. In contrast with parent-child relationships we find a strong tendency for reciprocity between friends. With the increase of number of children reported, transfer reciprocity between anchors and their friends declines. Findings support 'warm glow' related motives, and do not support the altruism hypothesis as the explanation for financial solidarity.

JEL Classifications: D10, D19, D13, D64

Key words: financial solidarity, inter-vivo family transfers, altruism, reciprocity, warm glow

1. Introduction

In every society individuals transfer money or valuables both to their children and friends. This raises important questions on the extent and interdependency of these financial transfers. If someone gives money to one of his children, is he/she more or less likely to provide money to the other children and to friends? If someone receives money from a child or a friend, is he/she more or less likely to receive from the others; and, is someone who gives at the same time less/more likely to receive from the same person or from others? The analysis of such questions can shed new light on the motives driving people to give to others.

This paper aims to explore the patterns of financial transfers with children and friends by accounting for the interdependent and simultaneous nature of these relationships. The empirical approach used in this paper consists of two steps. In the first step, the transfer likelihood is assessed by controlling for the main characteristics of both senders and receivers. In the second step, the correlations between residuals of each pairs of transfers are explored for different sub-groups of the main sample. This allows us to understand whether different inward and outward transfers are substitutes or complements, and whether the simultaneity of such transfers is influenced by factors like gender, age and number of children. The data used come from the first wave of the Netherlands Kinship Panel Study (2004-05), and contains detailed information on the individuals' relationships with their children and friends (among other members of kinship).

The investigation of the determinants of giving transfers to children and friends shows that age, education, and wealth are significant determinants. Variables like employment status, marital status, etc, are significant in determining the receipt of financial transfers. Negative shocks such as financial bankruptcy or sudden illness do not have a significant effect on the probability of receiving transfers, suggesting for other motives beyond altruism.

The analysis of the simultaneity of transfers shows that: (1) The correlation between transfers to both children is strong and positive. A similar though weaker correlation is found when comparing giving to children and friends simultaneously. This suggests an individual heterogeneity in the tendency to give. In other words, people, who give to one, are more likely to give to all the others. Parents tend to equalize between times transferred to each of their offspring. The existence of such strong correlations gives more evidence against the altruism hypothesis (stating that parents give more to the needier child). Parents have other reasons to transfer and our analysis shows that they value equality between their children. (2) A similar strong correlation is found between receiving from both children and also receiving from a child and a friend. If respondents are receiving from any of the three selected members they are also more likely to receive from the other two. Although the pattern is similar, the interpretation here is different since now the anchor is passive rather than active. This heterogeneity in inward transfers suggests for certain qualities, or actions performed by the

persons receiving transfers. (3) Findings on the ‘crowding out’ (people turning to children for financial transfers instead of friends) effects are mixed. Generally, people with more children are less likely to transfer to their children and friends, but on the other hand, even for people with higher number of children, transferring to children seems to be positively correlated with transferring to friends. (4) The reciprocity in transfers (positive correlation between giving and receiving to/from the same person) is strong between friends, and almost not existent in transfers between parents and children. Reciprocity is higher for females and declines sharply until it disappears with the increase of number of children.

Generally, the results of our analysis provide evidence for ‘warm glow’ rather than ‘altruism’ motives. Transfers are not dependent on specific shocks and there is no strong effect of incomes on transfer’s likelihood. People who give to one are more likely to give to others, and the same holds for receiving.

This paper contributes to the discussion about the motives driving private financial transfers. The body of literature on private financial transfers has been rapidly expanding in the last decades as more researchers have been interested in exploring the rationales behind the functioning of such relationships. In many cases lack of available data has somehow limited the progress, creating a lot of gaps in understanding the motives behind family financial transfers. The empirically based literature up to date is primarily focused on intergenerational relationships and makes a clear distinction between the inter-vivo transfers and bequests. Generally, bequests are documented to be shared equally among the children, while inter-vivo transfers appear to be unequally distributed and targeted towards the ‘needy’ members (see also Cox and Fafchamps, 2006). The patterns of financial transfers between non-family members of kinship are far less clear from the empirical studies. Cox, Galasso and Jimenez (2006), is one of the few studies focusing on economic aspects of inter-household transfers. They compared inter-households transfers between 11 developing countries around the world, finding relatively high (yet different) rates of transfers.

Several theoretical arguments have been put forward to explain the motives behind financial transfers, like: the altruism embedded in genetic fitness (Becker 1976; Becker 1981), exchange or ‘quid pro quo’ (Cox and Rank 1992; Cigno, Giannelli et al. 1998), ‘warm glow’ or ‘impure altruism’ (Andreoni 1993), crowding out of private transfers by public ones (Andreoni 1993), reciprocity as a social or family norm (MacCormack 1976; Johnson 1977; Osmond 1978), etc. Almost all these motives are investigated primarily based on intergenerational relations and aim to explain the motives behind parent to children (or vice versa) transfers. Nevertheless, other studies have shown that people, in general, tend to substantially interact with friends and other non-relatives. The extent of transfers between them varies depending on the context (Cox, Eser et al. 1996; Schoeni 1997), but generally the evidence suggests for relatively strong ties among these individuals (Dehejia, DeLeire and Luttmer, 2007). But, when individuals give both to family and non-family members would

the same motives explaining the intergenerational transfers still hold? Or, will there be more to say about the transfers in this later case? From a theoretical point, the main assumption would be that parents will tend to substitute their transfers to friends with transfers to children, (or ‘crowd out’ from their friends). To date is not yet known how this is sustained by the empirical data, and how is it different between different individuals. Moreover, would children and friends follow the same pattern when giving to their respective parents or friends? The contribution of this paper is in exploring the relationship between financial transfers within family members and between friends.

The paper begins in Section 2 with a review of the theoretical framework explaining motives behind family transfers from both theoretical and empirical literature. Section 3 and 4 discuss the nature of data and the theoretical model we use. Results from both steps of our analysis are given in Section 5. In section 6 we discuss both the implications of these results and the main findings.

2. The Theoretical Framework

The economic literature focusing on aspects of financial transfers within the family is dominated by two main arguments: “altruism” and “exchange”. The arguments are based on the fact that human beings can take roles of either ‘altruistic’ or ‘selfish/egoistic’ unities. The derived consequences from these behavioural profiles serve as a basis for the main economic models of family transfers.

Altruism is originally based on the socio-biological concept of genetic fitness.¹ In economic terms a person is considered to be *altruistic* with respect to another person if his/her welfare depends on the welfare of this other person (Becker 1981). Altruism is primarily observed in parent-child relations. Parents ‘care’ for wellbeing of their children because they care for transmission of their own genes. Hence, it is really plausible that parents have reasons to behave in an altruistic way towards their children, and that other blood relatives (to a certain degree) behave the same towards each other. Based on this definition, the economic literature describes altruism as a model where donors (i.e. parents) receive utility from their own consumption and also from their receivers’ consumption (i.e. children). Altruistic parents will tend to differentiate on the frequency (and amount) of gifts transferred to each child. They will clearly focus their attention on the neediest children.

Many researchers have tried to test whether altruism holds for intergenerational transfers. Most of their findings on inter-vivos financial transfers suggest for altruism motives in parents to children transfers (see McGarry and Schoeni 1995; Dunn and Philips 1997; McGarry 1997; Barnet-Verzat and Wolf 2002; MacDonald and Koh 2006).

¹ Simon (1993) states that “... if several groups compete for the same niche, the one having the highest average fitness will survive”. Consequently, altruistic behaviour would reduce the person’s genetic fitness with the scope of enhancing the fitness of other persons from the same group.

Trying to empirically test altruism, Cox (1987) found a positive correlation between financial transfers and wealth of the recipient. This suggested the presence of some other non-altruistic motives. He suggested that donors' utility is not only dependent on the consumption of himself and his transfers' recipients (as the altruism model suggests), but also depends on services received by the recipients. Cox suggested that parents gave financial transfers in exchange for the services rendered (this is widely known as "the exchange" motive). Several later studies have confirmed the same findings (Cox and Rank 1992; Cox, Eser et al. 1996; Lillard and Willis 2002; Light and McGarry 2004; Koh and MacDonald 2006).

Andreoni (1989, 1990) extends the altruism hypothesis to "impure altruism" or the "warm glow" hypothesis. Andreoni argues that people usually contribute to a certain public good (i.e. transfers to children or younger generations by parents if inter-family transfers are considered as contributions to public goods) because of two reasons; first, because they simply demand for more of this public good (defined by Becker (1981) as the "altruistic" reason), and second, because they derive utility from their gifts as such. Consequently, Andreoni implies that donor's utility is dependent not only on the total utility of both donor and recipient, but also on the act of giving itself. In this case, the parents do not only care for the well-being of their children, but also feel better realizing that they are giving to their (so perceived) needy children.

While generally, altruism models are primarily based on intergenerational motives, people tend to have also financial interactions with their non-family members of kinship networks. Frequency of these financial transfers seems to differ depending on the general patterns of private transfers and country's profile. Using the US Panel Study of Income Dynamics Schoeni (1997) showed that 2 per cent of individuals in the sample give a money transfer to their friends, and 1.5 per cent of them receive from them. Cox et al (1996) using data from Peruvian Living Standards Survey, found that around 14.2 per cent of individuals exchanged with their non-relatives.

But, is the altruism towards non-family members as strong as the altruism embedded in the shared genes? Cox and Fafchamps (2006) argue that the identification with a kinship group facilitates the feelings of guilt and shame, and this in turn enhances the feelings of caring and altruism among this group. But then, would the same persons behaving altruistically towards their offspring behave the same also towards their non-family kinship members? Would individuals behave altruistically towards all members of their kinship, or would the scarcity of resources constrain them in a strategic allocation of resources among them? Furthermore, if we assume that transfers from anchors are a form of contribution to a public good then it is not clear whether transfers to/from friends decrease as soon as the anchor will experience more transfers from children.

In this paper we consider the two "furthest" relations within kinship by comparing transfers with children and friends. The main hypotheses we have considered here are

altruism (people are more likely to give to their neediest children and friends), warm glow (some people are more likely to give to everybody as they associate value to the act of giving), crowding out (people substitute financial transfers to friends with those to children as soon as they have more children), and reciprocity (those who have received tend to reciprocate transfers).

Our approach consists in checking for the main determinants of transfers from/to the anchor. We also try to get more insights on the complexity of relationships by exploiting the simultaneous aspects of anchors' transfers with every pairs of alters (being this two children or one child and a friend), and by looking at the differences when the number of children changes. We also investigate the degree of 'reciprocity' in transferring, defined as correlation between giving and receiving from the same alter in order to understand more on the behavioural changes.

3. Data and descriptive statistics

The data come from the Netherlands Kinship Panel Study (NKPS). NKPS is a panel survey designed to get information on the family and kinship ties in the Netherlands. We use data from the first wave of the survey, collected during 2003 – 2004. The variables include individual characteristics as well as transfer attitudes with selected kinship members. The survey is designed to get as much information on the individual respondents (so called 'anchors'), and the surrounding kinship members. Anchors have provided information on their selected kinship members, including parents, partner, children, siblings, grandparents and grandchildren, non-family members, and other members of the household. These members are referred to as 'alters'.² Information on the marital status, number of children, education, and exchanged support, has been reported for at most nine of these 'alters'. The two children (child A and B) are selected randomly from all possible children of the anchor.³ Friends are defined as persons in regular touch with the anchor and who are important to him/her. They can be; acquaintances, colleagues, neighbours, or people met through a club or society (see also Table 2A in the Appendixes). Every anchor is requested to select five different friends and then one of them is picked randomly and more detailed information is requested on him/her.

² The 'alters' include (when possible) the partner, mother, father, a randomly selected parent-in-law, a maximum of two randomly selected biological/adopted children aged 15 or over, a maximum of two biological/adopted siblings aged 15 or over, and a randomly selected member of the non-family network (see also: Dykstra P. A., 2005, Codebook of the Netherlands Kinship Panel Study, NKPS Working Paper No. 4. The Hague: Netherlands Interdisciplinary Demographic Institute)

³ Whenever there is only one child, or the anchor did not have any contacts with the other child(ren) during the past 12 months, then this is always labelled as child A.

To assess the financial transfers between the anchor and his/her children and friends we use questions on the substantial amount of money or valuable objects (these include irregular and periodical payments) transferred between them during the past 12 months.⁴

3.1 Sample population

The survey collects information from individuals between 18 – 80 years old. The full sample includes information on 8161 anchors. Anchors have reported on giving and receiving financial transfers from at most two of the children aged 15 or over and for one friend 18 – 80 years old. Although selection of children in the survey is randomized, for standardization purposes we have reordered the data, labelling the oldest child as ‘child 1’ and the youngest as ‘child 2’. Whenever data were provided on only one of them he/she was ordered as child 1. The reordered sample includes 3653 children 1 and 2899 children 2. For financial transfers given to children anchors have reported on both children living inside and outside the household, while for received transfers they report only on children living outside the household. We have decided to not differentiate between these transfers as we mostly deal with adult children (over 15 years old), and we do not suspect any significant differences in determinants of transfer patterns between these two groups.⁵ Finally, we have also omitted those observations with missing values for any of the following variables: financial transfers (to or from the children), children’s age, and children’s sex. The final samples of children 1 and 2 are displayed in Table A1 (see appendixes) and includes 3575 children 1, and 2846 children 2 alters for whom anchors have reported on giving financial transfers, and 2792 children 1, and 2145 children 2 on receiving financial transfers.

The information on selected friends is given in Table A2 (see appendixes). Out of the main sample we have omitted observations with missing values on financial transfers, and age or sex of friends. The remaining sample consists of 7176 alter friends.

Table 1 gives some more detailed descriptive information on the financial transfers or valuable gifts transferred in past 12 months between the anchor and alters (children 1 & 2 and friend) grouping anchors by total number of children

Table 1. Giving and receiving financial transfers to children and friends by number of total children (as % of the group’s total)

Total number of children for anchor		Anchor has 0 children	Anchor has 1 child	Anchor has 2 children	Anchor has 3 children	Anchor has 4+ children	Total
Anchor giving financial	Child 1	.	28.65*** 384	25.80*** 1625	20.55** 944	16.40*** 622	23.09 3575
	Child 2	.	.	26.21*** 1408	21.92 853	17.61*** 585	23.16 2846

⁴ Pocket money given to children living in the the households is not accounted for in these transfers and the information is gathered in a separate section. We do not include these kinds of transfers in our analysis.

⁵ We have also tried to run the models separately for children living in the household and outside the household and found no big differences between determinants of financial transfers given to these different sub-groups.

	Friend	2.59***	1.30	0.79***	0.55**	0.36**	1.37
	<i>N</i>	2315	923	2288	1099	551	7176
Anchor receiving financial help from :	Child 1	.	5.52***	2.64	1.63*	2.11	2.58
	<i>N</i>	.	290	1246	734	522	2792
	Child 2	.	.	1.88	1.77	2.61	2.00
	<i>N</i>	.	.	1063	622	460	2145
	Friend	1.68***	1.19	0.66**	0.82	0.18**	1.05
	<i>N</i>	2315	923	2288	1099	551	7176

N – number of observations for each category

Stars indicate whether the mean for each group is significantly different from the total mean (* significant at 10%; ** significant at 5%; *** significant at 1%).

The upper part of the table gives information on transfers received by the anchor, while the lower part shows the breakdown of financial transfers given to children and friend (as reported by anchor). As it can be observed, the share of respondents reporting to have received any financial transfers from their children is far less than those reporting to give to their children.

Out of all anchors, 23.1 percent have reported giving at least once during the last year to child 1 and the same share reports giving to child 2. Only about 2.6 percent and 2 percent of the anchors have reported to have received any financial transfers respectively from child 1 or child 2 during the last year. The figures confirm that financial resources flow mainly from old to young generations, reported also from previous studies in different developed countries (Gale and Scholz, 1991; Cox and Rank 1992; McGarry and Schoeni 1995; Altonji et al 1995; etc). The financial transfers between anchors and friends are relatively low (though comparable to those reported from other sources, such as those in US by Schoeni, 1997), and do not vary much if we compare the direction of the transfer (giving and receiving). Out of 7176 respondents, 1.37 percent of them have reported to have given at least once during the last year to their friends, while 1.05 percent of the anchors have reported to have received from them. Incidence of transfers to and from all sources decreases with the increase in number of children.

Table 2. Simultaneous positive financial transfers (as % to the total reported on both sources)

		Anchor giving financial help to:			Anchor receiving financial help from:		
		Child 1	Child 2	Friend	Child 1	Child 2	Friend
Anchor giving financial help to :	Child 1	100					
	<i>N</i>	3578					
	Child 2	17.55	100				
	<i>N</i>	2809	2846				
	Friend	0.53	0.29	100			
	<i>N</i>	3032	2408	7176			
Anchor receiving financial help from :	Child 1	0.72	0.67	0.08	100		
	<i>N</i>	2795	2394	2354	2795		
	Child 2	0.57	0.70	0.00	0.98	100	
	<i>N</i>	2114	2148	1819	2045	2148	
	Friend	0.33	0.21	0.26	0.25	0.16	100
	<i>N</i>	3032	2408	7176	2354	1819	7176

Table 2 gives an overview of positive simultaneous transfers between anchors and any other pairs of alters. The table shows that 17.55 percent of all the anchors reporting on child 1 and child 2 have made at least a financial transfer to each of them during the last year. Simultaneous transfers to/from all others pairs are much lower than this, reflecting also the lower incidence of such transfers to/from these sources (see Table 1) ⁶

A first intuitive interpretation of these simultaneous transfers would suggest that anchors are more likely to give to their children than to give/receive from others. Whenever they give to their children they try to equalize both children much more than they would do for the other pairs of relations.

We investigate further the reasons behind transfers and their simultaneity by using predicted residuals from our models and also by looking at the complete picture of correlations of these residuals (see section 4).

3.2 Anchor and Alter Characteristics

The survey provides detailed information on characteristics of anchors. Based on availability of variables we have selected a number of control variables for all anchors as follows: age at interview, gender, number of children/siblings, employment status, anchor's (and partner) employment incomes and benefits per month, health status and long term illness, household size, educational level, status of enrolment, dummy if the current year is the same year the anchor moves in a new house.

Information on income from employment for both anchor and partner is also collected. We have reconstructed the employment income variable based on the information in the survey. Respondents have the choice to report their income over a month, four weeks, a week, or their average monthly income. For the purpose of our analysis we standardize all answers on monthly basis.

Income from social benefits includes grants for students, social security, unemployment, disability, pension and pre-pension benefits. The benefits are also reported on monthly basis. Table A4 in the appendixes gives descriptive statistics on the sources of incomes for anchors with no current partner and for those who reported on their partner. As we can observe 5856 individuals have reported on their current partners and their incomes if we consider the whole sample (this number varies if we consider the different sub-samples). Out of single anchors 47 percent have reported some source of employment and 41 percent have reported to receive social benefits. These numbers compare to 60 percent and 22 percent for those with a current partner. The incomes that partners of anchors earn are also divided between net income from employment and benefits. Consequently, 57 percent of the partners

⁶ Percentages on Table 2 are dependent on the total number of observations for each cross-transfer and also affected by the incidence of giving and receiving in general for these specific categories.

have declared to be employed while we have information only on few of them with regard to benefits they receive. This is due to the fact that the question is only included on the self-completion questionnaires (filled by the partners) and thus only asked to a smaller number of them. Due to this we have decided to omit this information from our models and control separately for each income source.

The detailed tables for different sub-samples and descriptive statistics for dependent variables are given in Tables A5-A6. Age of anchor is represented by dummy variables that may differ between sub-samples of interests. Generally, these dummies account for 10 years intervals. Self-reported health status is accounted for through five dummy variables; “excellent”, “good”, “neither good nor poor”, “poor”, and “very poor”⁷. In the same way the marital status is represented by five dummy variables: “married”, “cohabitating”, “widowed”, “divorced”, and “never married”.⁸ The same procedure is repeated for the current employment status of both the anchor and the partner. Six employment status accounted for are: “employed”, “unemployed”, “housewife”, “disabled”, “pensioner”, and “other”.⁹

The education dummies are constructed based on a categorical variable indicating the level of education that the individual has already completed. Consequently it distinguishes among three levels of education: lower (if respondent or alter has completed up to elementary school, lower vocational or lower general secondary), secondary (if intermediate general secondary, upper general secondary or intermediate vocational is completed), and higher (if higher vocational education, university or other post-graduate course is completed).

Other variables of interest to our analysis are the urbanization of anchor, the distance from anchor to alters, and the country of birth. Urbanization is an index variable which takes values from 1 to 5 depending on the addresses per kilometre squared (from less dense to crowded areas), while distance is represented by the natural logarithm of physical distance in kilometres. Country of birth is a control variable that is used to control for any differences in ethnicity, and which produces better results than the other available alternatives.¹⁰

The main variables used for alters are: age, sex, level of education, marital status, number of kids, and enrolment status. Additional control variables we use for the two alter-children are; dummy if child is adopted, and a dummy if child is household member. As we plan to analyze these relationships separately from each other (also for not losing important information) we have displayed the characteristics of the independent variables separately for giving and receiving and also for each relationship (Tables A5 – A6).

⁷ We have decomposed the initial categorical health status variable included in the survey as we want to control for the specific role that certain categories of health status play in determining these transfers.

⁸ Due to low number of observations we have grouped together “married” or “cohabitating”, and also “widowed” or “divorced” for anchor’s partner or for alters.

⁹ Due to low number of observations we have grouped together “unemployed” or “housewife”, and also “disabled” or “pensioner” for anchor or hos/her partner.

¹⁰ Very low number of the anchors in the sample has non-Dutch Nationality (1.91 percent out of 8122 reporting), while only 15.18 percent of the sample size report on the ethnic self-identification. We have grouped the nationalities in nine major groups (see also Table A3).

4. Empirical strategy

We begin our analysis by controlling for main characteristics of those who have sent and received transfers. This is done by using a logit model, where transfer occurrence is represented by a binary variable and takes only two values coded 0 and 1, where:

$$y_i = \begin{cases} 1 & \text{if the } i\text{-th anchor is sending (receiving) a transfer larger than 0 to his alter} \\ 0 & \text{otherwise} \end{cases}$$

Our goal is to identify which of the characteristics of children and friends are important in determining whether he/she gives (or receives) a transfer. Given the nature of our data, we have considered choosing between a logit and an ordinal logit model. The logit model accounts for binary choices (in our case “0” or “bigger than 0” transfers), while an ordinal logit could be used for more than two levels (our data allows also for a distinction between “0”, “500 or less” and “more than 500 Euros”). The basic assumption of the ordinal models is the “proportional odds assumption” stating that the relationship between covariates and outcome groups is the same between every outcome categories.¹¹ Given the nature of transfers we suspect this assumption to not necessarily hold. Previous research has shown evidence for substantial differences between the decision of giving a transfer (as compared to non-giving) and the decision on the amount given. If this would be true, covariates explaining the relationship between these two groups will not be the same. We test the proportional odds assumption for all the models of our interest.¹² Results from the tests are displayed in Table A7 and show that for five of these relationships the ‘proportional odds assumption’ does not hold. This supports the idea of diversity between the determinants of how much is transferred. As our primary goal is to explore the determinants for the probability of transferring, we choose the binomial logit model.¹³ We run the model for each of the relationships individually, and for both giving and receiving. The transfer occurrence to/from each alter takes the form as below:

$$MT = \begin{cases} 1 & \text{if } \alpha + \beta_1 X_{anchor} + \beta_2 X_{alter} + \varepsilon_{alter} > 0 \end{cases}$$

¹¹ Ordinal variables do not establish the numeric difference between data points, but one of the fundamental assumptions of the ordinal probit (logit) regression is that the effects of the covariates x_1, x_2, \dots, x_{p-1} should be the same for every outcome categories in the logarithmic scale. In other words, this would mean that relationship between the covariates and the outcome groups is the same and does not vary. This is also known as the odds assumption (or the parallel regressions assumption), and sets the basis for having only one set of coefficients for all the possible sets of groups.

¹² This test uses the result from parallel probit models and tests the difference in coefficients between the models. A significant result indicates for the need of using different models for each pairs of outcome groups.

¹³ The results for multinomial logit models are also available on request and give similar results both on the main determinants and the interdependency of transfers.

Where MT refers to the dichotomous variable of transferring any amounts of money or valuables from anchor to his/her alter (and vice versa), α is a constant, β_1 and β_2 are vectors of estimated coefficients that correspond to characteristics of the anchor and the alter, and ε is a vector of residuals errors having a normal distribution. The alter corresponds either to child 1, child 2, or the friend. The characteristics of the anchor and alters are displayed in Tables A5 – A6, separately for each of the relationships.

Our other goal is to explore interdependence of such transfers. For this we want to know to what extent these transfers are correlated to each other. We do this by estimating separately standardized Pearson residuals for each of the logit models we ran previously. To check for the significance and differences in correlations we have used two methods. The first method consists in running the logit model for each of the one-side relationships including the residuals of the other models of interest. This is repeated for all the possible combinations in our data. In this case the logit model takes the form as below:

$$MT = \begin{cases} 1 & \text{if } \alpha + \beta_1 X_{anchor} + \beta_2 X_{alter1} + \beta_3 \varepsilon_{alter2} + \varepsilon_{alter1} > 0 \\ 0 & \text{otherwise} \end{cases}$$

where β_3 is a vector of estimated coefficients corresponding to error terms from previously estimated models, and ε is the vector of residuals errors having a normal distribution. Alter 1 and alter 2 correspond to each of the combinations between child 1, child 2 and the friend.

The second method is based on using residuals from each of previously estimated logit models to check for specific pair-wise correlation and statistical significance. We repeat the same procedure for different sub-groups of the main sample in order to further explore the interdependent nature of the transfers and the effect that additional number of children, gender or age has on it.

The results from both methods are consistent over our sample, demonstrating also for robustness of such correlations. We display here only results from the later method as these are also easier to interpret.

5. Empirical results

We first turn our attention to the relationship between the anchor and children looking at the main determinants of transfers. For this we run models for ‘outward’ (an anchor giving to alters) and ‘inward’ (an anchor receiving from alters) financial transfers between the anchors and each alters. The control variables for these models are shown in Tables 5A – 7A. We have grouped them in main groups corresponding to characteristics of anchors like age and gender,

number of children, household size, employment status, dwelling, employment incomes, education, marital status, and other (country of birth, and moving in a new house). We also control for a range of alters' characteristics like; age and gender, education, urbanization, and logarithm of the distance from anchor. The reference categories are given in parenthesis.

As financial transfers within the kin members could be also triggered by particular events or shocks, we have checked for the effects of other alternative control variables in our models. The survey gives information on major shocks happened during last 12 months to anchor or other family members. Among these shocks we have selected severe financial problems, and having a severe illness. They did not appear to have significant statistical effects on outputs (we only have this information for anchors and children, but not for friends).¹⁴ Therefore, we have omitted them from our models (models including these variables are shown in Table A10 in the appendixes).

5.1 The determinants of financial transfers

The results of the models estimating outward financial transfers to child 1, child 2 and friends are given in Table 3. Gender coefficients suggest that females are less likely to give (though coefficients show statistical significance only for transfers to friends). The age of anchors influences positively the likelihood of transfers to children and friends (older anchors – especially those more than 65 years - are more likely to give). The effect is statistically significant for transfers to children, which confirms the flow of transfers from old to young generations. On the other hand, aging (for anchors between 45 and 64 years old) influences negatively the likelihood of transfers to friends, but the effect is not statistically significant. The number of anchor's children has a negative effect on the likelihood of giving a financial transfer to both children and friends. This effect is larger especially for transfers to friends. This suggests that giving is less likely when having more children. Unemployed anchors are less likely to give to their alters, but the results are not significant. The unemployment and/or housewife status of anchor's partner also influences negatively the probability of the transfers to both parties (and the results are significant). The wealthier (detached type of house is used as a proxy) and the well-paid anchors are more likely to transfer to both children and friends (both effects are not statistically significant for friends). The incomes of anchor's partner do not have a statistically significant effect on the likelihood of transfers to both children and friends.

Table 3. Logit estimations of giving financial transfers to children and friends (anchor transferring to alters)

	Giving to Child 1	Giving to Child 2	Giving to Friend
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¹⁴ Other variables we have considered are religious membership and religious practice (visiting church at least a couple of times a year), but neither of them appears to yield any significant results.

		Coef.	st. error	Coef.	st. error	Coef.	st. error
Anchor: Gender and age	Anchor Gender: female (Anchor age less than 35)	-0.04	0.11	-0.09	0.12	-0.48*	0.27
	Anchor age between 35-44					0.00	0.33
	Anchor age between 45-54	0.29*	0.17	0.28	0.23	-0.26	0.45
	Anchor age between 55-64	0.49**	0.22	0.28	0.27	-0.58	0.6
	Anchor age 65 plus	0.50*	0.28	0.57*	0.33	0.65	0.79
Anchor: Children	Anchor number of children	-0.19***	0.04	-0.11**	0.05	-0.42***	0.14
Anchor household	Anchor household size	-0.02	0.06	-0.26***	0.08	0.08	0.11
Anchor and partner: employem t status	(Anchor employed)						
	Anchor unempl/housewife	-0.11	0.17	-0.22	0.2	0.33	0.44
	Anchor disabled	-0.25	0.25	0.2	0.27	0.26	0.6
	Anchor pensioner	-0.06	0.19	0.11	0.22	-0.54	0.71
	(Partner employed)						
	Partner unempl/housewife	-0.38**	0.16	-0.53**	0.21	-0.23	0.74
Partner pensioner/disabled	0.07	0.15	-0.08	0.16	0.74	0.58	
Anchor student					-0.16	0.54	
Partner student					-0.22	0.88	
Anchor: Dwelling	Anchor currently living in detached house	0.43***	0.1	0.32***	0.11	0.26	0.34
Anchor/Par tner: Empl. income	Anchor's income (ln)	0.09	0.06	0.23***	0.09	0.21	0.2
	Anchor's benefits (ln)	0.00	0.02	0.01	0.02	-0.02	0.05
	Anchor's partner inc. (ln)	0.01	0.02	0.02	0.03	0.01	0.1
Anchor: Education	Anchor Lower Educ. (Anchor Intermed. Educ.)	-0.32***	0.11	-0.2	0.13	-0.29	0.29
	Anchor HigherEduc.	0.34***	0.11	0.40***	0.13	0.05	0.27
Anchor: Marital Status	(Anchor: Married)						
	Anchor: Never married	-0.4	0.33	-1.07*	0.56	0.53	0.35
	Anchor: Divorced	0.00	0.16	-0.35*	0.19	0.80*	0.42
Anchor: Widow	0.19	0.19	-0.14	0.21	1.25**	0.56	
Anchor: Other	Anchor: Current year of moving in the new house	0.33	0.37	0.00	0.43	0.14	0.53
	Born in The Netherlands	-0.46**	0.2	-0.41*	0.24	-0.75**	0.35
Alters: Age and Gender	Alter gender: Female (Alter age less than 25)	0.15*	0.08	0.00	0.09	0.23	0.26
	Alter age 25-34	0.95***	0.23	0.79***	0.26		
	Alter age 35-44	0.30*	0.16	0.58***	0.17	-0.42	0.34
	Alter 45+ (Friend 45-54)	0.42**	0.18	0.19	0.25	-0.7	0.45
	Alter age between 55-64					0.19	0.48
	Alter age 65 and older					-1.01	0.67
Alters: Education	Alter currently enrolled (Alter intermed. education)	0.11	0.17	0.64***	0.18	0.34	0.45
	Alter low education	-0.56***	0.11	-0.48***	0.12	0.22	0.27
	Alter high education	0.02	0.11	0.01	0.12	-0.67**	0.29
Alters: Urbanizatio n and distance	Alter urbanization (1 low density - 5 high density)	-0.04	0.04	0.05	0.05	-0.17*	0.1
	Alter – Anchor distance (ln)	0.02	0.03	0.04	0.03	0.06	0.05
	Constant	-1.43**	0.63	-2.39***	0.84	-4.42***	1.71
	N	3574		2843		7105	
	Log likelihood	-1784		-1413		-459	

Note: Other variables included are: “anchor’s health status” (excellent, good, average, bad/very bad), “anchor has long term illness (dummy), “alters marital status” (married/cohabitating, widowed/divorced, single), “alter’s number of children”, and “alter is adopted child” (dummy). Reference categories are in brackets.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Education of the anchor is another factor influencing positively the likelihood of transfers to children (not statistically significant for transfers to friend). Higher educated people are more likely to transfer to their children as compared to the middle and lower educated.

The fact that the anchor is born in the Netherlands influences negatively the likelihood of transfers. This suggests that those born in a different country are more likely to give. We have also checked for specific patterns based on the specific foreign country of birth (see also Table 3A for a list of groups of countries). but did not find any particular results between different categories of anchors born abroad.

Female alters (both children and friends) appear to influence positively the likelihood of the transfers from anchor, and the significant results for child 1 sustain this. Relationship between age of alters and transfers to them appears to follow a more complex pattern. Children below 35 years old seem to be more likely to receive transfers than any other age cohorts. Transfers to friends are more likely throughout the first age cohorts but decrease significantly for older friends (65 or older).

Education of alters is again an important factor, though the effect for children and friends is different. Highly educated children seem to be more likely to receive from their parents, while highly educated friends are less likely to receive from their friends. Children enrolment is also positively related to the probability of transfers and appears to be significant, especially for child 2.

Urbanization (measured as number of addresses per square kilometre), influences negatively the likelihood of transfers to friend, while the distance between the anchors and alters does not have any statistically significant influence on the decision to transfer.

Table 3. Logit estimations of receiving financial transfers from children and friends (alters transferring to anchor)

		Receiving from Child 1		Receiving from Child 2		Receiving from Friend	
		Coef.	st. err.	Coef.	st. err.	Coef.	st. err.
Anchor: Gender and age	Anchor Gender: female (Anchor age less than 35)	0.54	0.34	0.23	0.44	0.5	0.33
	Anchor age 35-44					-0.57	0.39
	Anchor age 45-54	-0.11	0.75			-1.15**	0.51
	Anchor age 55-64	0.00	0.85	0.28	0.57	-1.51**	0.67
	Anchor age 65 plus	-0.17	0.95	0.32	0.77	-2.99***	1
Anchor: Children	Anchor number of children	-0.41***	0.14	0.06	0.14	-0.22	0.15
Anchor household	Anchor household size	0.36	0.22	0.62*	0.34	-0.01	0.14
Anchor and partner: employment status	(Anchor employed)						
	Anchor unempl/housewife	1.44**	0.63	0.78	0.86	0.38	0.45
	Anchor disabled	1.42*	0.74	1.41	0.93	0.42	0.6
	Anchor pensioner (Partner employed)	1.78***	0.67	0.96	0.87	1.51**	0.73
	Partner unempl/housewife	-0.36	0.65	-0.06	0.88	0.24	0.65
	Partner pensioner/disabled	0.53	0.42	-0.36	0.6	-0.7	0.8
	Anchor student Partner student					-0.21	0.64
					0.51	1.35	
Anchor: Dwelling	Anchor currently living in detached house	-0.38	0.36	-1.28**	0.63	0.09	0.4
Anchor/Partner: Empl. income	Anchor's income (ln)	0.42	0.34	-0.2	0.35	0.06	0.17
	Anchor's benefits (ln)	-0.05	0.04	-0.08	0.06	0.01	0.05
	Anchor's partner inc. (ln)	-0.09	0.08	0.01	0.12	0	0.09
Anchor:	(Anchor Intermediate Educ.) Anchor Lower Educ.	0.06	0.32	-0.41	0.4	0.53	0.33

Education	Anchor Higher Educ.	-0.28	0.38	-0.68	0.52	0.14	0.32
Anchor: Marital Status	(Anchor: Married)						
	Anchor: Never married	1.20	0.84	1.89	1.27	0.06	0.39
	Anchor: Divorced	1.29***	0.44	1.25**	0.61	-0.13	0.5
	Anchor: Widow	0.55	0.52	0.36	0.68	0.31	0.67
Anchor: Other	Anchor: Current year of moving in the new house	-0.19	1.06	1.99***	0.76	0.52	0.55
	Born in The Netherlands	-0.58	0.58	0.05	0.88	-0.72*	0.38
Alters: Age and Gender	Alter gender: Female	-0.17	0.25	-0.04	0.33	0.21	0.29
	(Alter age less than 25)						
	Alter age 25-34	0.45	0.64	-1.81*	0.99		
	Alter age 35-44	0.00	0.4	-0.07	0.47	0.50	0.39
	Alter 45+ (Friend 45-54)	0.52	0.43	0.04	0.68	1.01**	0.47
	Alter age between 55-64					1.46***	0.54
	Alter age 65 and older					0.57	0.81
Alters: Education	(Alter intermediate education)						
	Alter low education	-0.49	0.4	-0.65	0.45	-0.38	0.33
	Alter high education	0.71**	0.29	0.17	0.4	-0.44	0.32
	Alter is enrolled					0.04	0.58
Alters: Urbanization and distance	Alter urbanization (1 low density - 5 high density)	-0.08	0.11	0.05	0.14	-0.22**	0.11
	Alter – Anchor distance (ln)	0.11	0.07	0.02	0.09	0.09	0.06
	Constant	-7.39**	2.95	-4.3	3.02	-3.45**	1.58
	N	2731		2118		7105	
	Log likelihood	-298		-179		-377	

Note: Other variables included are: “anchor’s health status” (excellent, good, average, bad/very bad), “anchor has long term illness (dummy), “alters marital status” (married/cohabitating, widowed/divorced, single), “alter’s number of children”, and “alter is adopted child” (dummy).

* significant at 10%; ** significant at 5%; *** significant at 1% . Reference categories in brackets.

Estimation results for receiving financial transfers from alters are given in Table 5. Gender coefficients appear to be positive (but not significant) for both children and friends suggesting that female anchors are more likely to receive. The age of anchor does not have a significant effect on the likelihood of transfers from children, but turns to be significant when it comes to friends. Coefficients suggest that younger anchors are more likely to receive as compared to anchors 65 years old or more.

Anchor’s number of children appears to influence negatively likelihood of receiving financial transfers, (statistically significant for child 1). This is consistent with the effect of number of children on outward transfers indicating a big influence of the number of children on the likelihood of both giving and receiving. Households with more members are more likely to receive from children (effect statistically significant for child 2).

The employment status of the anchor turns to be statistically significant with unemployed anchors having a higher probability of receiving transfers (particularly significant in case of child 1). Instead, employment status of anchor’s partner is no longer statistically significant.

Wealthier anchors are less likely to receive from children, but this does not hold for transfers from friends. Indeed, the likelihood of transfers from friends is positively influenced by the anchors’ higher incomes from employment (though the effect is not statistically significant). Anchor’s incomes do not appear to have a statistically significant effect on the

financial help received from children. This suggests for little signs of altruism in these relationships.

Anchor's education does not have a statistically significant effect on the likelihood of received transfers, though it should be noted (once more) that lower educated are more likely to receive from friends than the highly educated. Being born in The Netherlands appears to have a negative effect on the likelihood of receiving transfers from friends, suggesting again for a more frequent pattern of transfers among those with a different ethnic background. Again none of the other ethnic groups appear to have a particular different pattern, even though the effect (when considering all of them together as in here) is statistically significant.

Younger children, under 35 years old, appear to be less likely to receive financial transfers (statistically significant for child 2). Children over 45 years old appear to more likely to receive transfers from anchors. This confirms once more the trend that aging influences positively these transfers. The opposite relation seems to take place in case of friends, where friends are most likely to transfer when they are 55-64 years old.

Education of the children influences (again) positively the transfers to their parents, while their urbanization index and distance from parents do not yield statistically significant results. As it was the case for the outward transfers, the urbanization of friend influences negatively the likelihood of transfers to the anchors. This indicates a lower incidence of financial transfers among friends in the highly populated areas.

5.2 The simultaneity of transfers

In the next step we explore the simultaneity of transfers given and received by anchors accounting for simultaneous transfers to/from each combination of alters. Our aim is to identify possible transfer patterns and behaviour changes as the number of alters and characteristics of the anchor vary within our main sample. If the residuals of previous models appear to be correlated with one another, then this will indicate that decisions to transfer are jointly determined. Consequently, there would be reason to believe that the anchor would associate these transfers with a particular cause or 'strategy'.

To get a general idea about dependency of such transfers we first look at the general picture by considering the total sample. The correlation table is given in Table 6 and includes all possible pair-wise coefficients of the correlations. Simultaneous inward or outward transfers with each pairs of alters (i.e. giving simultaneously to both children, or receiving simultaneously from child 1 and friend) appears to be statistically significant in all the cases. The highest values of coefficients are observed when giving to both children (this is consistent with the figures in Table 2). The positive correlation coefficient demonstrates a general equalitarian trend of the anchors towards their both children (anchors are very likely to transfer to all of their children).

Receiving simultaneously from both children is also very likely in our sample. The coefficient now is smaller than for outward transfers.

Other interesting trends are also the positive and statistically significant coefficients for inward or outward simultaneous transfers to one of the children and friend. This indicates for a relative homogeneity in giving or receiving (i.e anchors who give to a child or a friend are also likely to give to others).

Table 5. Correlations of residuals from giving and receiving logit models

		Anchor giving financial help to:			Anchor receiving financial help from:		
		Child 1	Child 2	Friend	Child 1	Child 2	Friend
Anchor giving financial help to:	Child 1	1.00					
	<i>N</i>	3574					
	Child 2	0.68***	1.00				
	<i>N</i>	2809	2846				
	Friend	0.09***	0.08***	1.00			
	<i>N</i>	3008	2388	7140			
Anchor receiving financial help from:	Child 1	0.01	0.03	0.02	1.00		
	<i>N</i>	2791	2394	2332	2791		
	Child 2	0.02	0.06***	-0.01	0.42***	1.00	
	<i>N</i>	2114	2148	1802	2045	2148	
	Friend	0.06***	0.02	0.19***	0.27***	0.10***	1.00
	<i>N</i>	3008	2388	7140	2332	1802	7140

* significant at 10%; ** significant at 5%; *** significant at 1%

Results from Table 5 show that although the patterns of simultaneous outward and inward transfers to children and friends are similar, they also differ in the extent they are correlated to each other. When giving, the anchor tends to equalize more between financial transfers to his/her children, while he/she is less likely to receive from both of them. On the contrary, the anchor is less likely to give to both children and friends than he/she is to receive from them (higher correlation coefficients). The reason may simply lie on the motives triggering received transfers. Some of the anchors can be more able than others to attract transfers from different sources.

On the other hand, simultaneity of giving and receiving to/from children and friends suggests for little evidence of a “crowding out” effect that would substitute the role of friends with children. While it is true that people with more children are less likely to transfer to their friends (or children), those who still transfer to their children are also likely to transfer to their friends.

Controlling for age, sex, or amount transferred (less than 500 Euros or more than 500 Euros) does not affect these results (see also Table A8 in the appendixes). The break down of correlations by age suggests that anchors younger than 65 years old experience are more likely to receive simultaneous transfers from child 1/child 2 and friends if compared to anchors older than 65. Simultaneous giving to child 1/child 2 and friend is less likely for anchors younger than 65 years and more likely for those older than 65.

The simultaneous giving and receiving with the same person are also another important aspect of the relationships with children and friends. Such simultaneous transfers would usually indicate for a sense of “reciprocity” between the anchors and alters (paying back what has been received). The results from Table 5 suggest that reciprocal transfers are not really common for anchor-child relationships, but the effect is strong for the anchor-friend relations. In fact, for the anchor-friend relationships the positive and significant coefficient indicates for a relatively high degree of reciprocity. Logically, such reciprocity is something that would be expected as the ties with them are quite different compared to those with closer relatives. But our interest is on how this reciprocity changes when considering different characteristics of the anchors. We first explore how these coefficients reflect the changes in the number of children. From the total sample we consider separately those anchors that do not report on any children, those reporting only on child 1 (and the friend), and those who report on both children and the friend.

The coefficients of the correlations are given in Table 7 and show a significant decrease of the “reciprocity” for the transfers between anchors and friends. The anchors reporting no children give and receive simultaneously more to friends than those reporting only on child 1, and than those reporting on both child 1 and 2. Figure 1 below shows graphically the decrease of such reciprocity in the relationship with friends when number of children reported increases. The figure gives the particular decline in the ‘reciprocity’ when the number of children for whom the anchor reports increases from zero to two.

With the increase in the number of children, transfers to/from friend become more unilateral in nature. The females tend to be more reciprocal on transfers with respect to their friend, but with the increase of the number of children they also converge with the trend of the total sample.

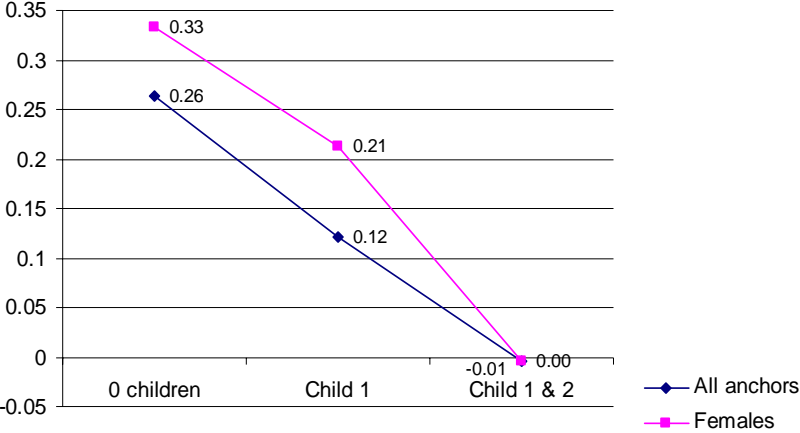
Table 6. Pair wise correlations of residuals from transfer models for number of children and gender of anchor

All Anchors			Female Anchors		
1) Anchor has no children			1) Anchor has no children		
		Anchor giving financial help to friend			Anchor giving financial help to friend
Anchor receiving financial help from friend	Corr. Coef	0.264***	Anchor receiving financial help from friend	Corr. Coef	0.333***
	<i>N</i>	4073		<i>N</i>	2410
2) Anchor reports only child 1			2) Anchor reports only child 1		
Anchor receiving financial help from friend	Corr. Coef	0.121***	Anchor receiving financial help from friend	Corr. Coef	0.212***
	<i>N</i>	646		<i>N</i>	403
3) Anchor reports on both child 1 & 2			3) Anchor reports on both child 1 & 2		
Anchor receiving financial help from friend	Corr. Coef	-0.004	Anchor receiving financial help from friend	Corr. Coef	-0.005
	<i>N</i>	2421		<i>N</i>	1466

* significant at 10%; ** significant at 5%; *** significant at 1%

In fact such a decline needs more attention, as this may be also induced by a general decline in the level of transfers when number of children increases. As we have noted in Section 3 (Table 1), likelihoods of transfers to/from friends decline (in relative terms to the total transfers reported), but we notice that the decline in reciprocity is even sharper and this is also confirmed by the correlation coefficients above. Moreover, with the increase in number of children the likelihood of transfers to/from other sources (like other child and friend) decreases as well.

Figure 1. Reciprocity* of transfers between anchor and friend



* Based on coefficients of pair-wise correlation of the models' residuals for sub-groups of our sample

We can conclude that with the increase of children, the likelihood of transfers to all alters is affected negatively, but simultaneous giving to both children or to children and friend is not affected significantly. On the other hand, what is affected significantly is only the reciprocity in transfers with the friend.

Aging influences positively the likelihood of transfers to/from children while younger generations are more likely to send and receive to/from friends. We have tested the effect that aging has on this relationship (by analyzing separately different age cohorts reporting on none or both children) and this appears to be irrelevant to the decline of this reciprocity (see also Table A8).

6. Discussion and Final Remarks

Our analysis aimed to explore the determinants of financial transfers between individuals and their children and friends. We have chosen children and friends as two of the kin members in different relationships with anchors in question. Individuals have a very direct relationship with their children. This is shaped by different reasons varying from the genetic fitness (as sociobiologists may argue), family existence necessities, family norms, economic dependence and interests, etc. Relationship between anchors and their friends is ruled by different necessities and norms. Many previous genetic or other links related to the existence of the family do not exist in such relationships. The central question naturally asked in this

context is to what extent these differences will shape the patterns of financial help and gifts exchanged? We try to answer this question by looking at the main characteristics of the donor and receiver, and the influence of such characteristics on determining the probability of transferring.

Another aspect of financial transfers is that they are usually made in contexts where the donor has to take simultaneous decisions on whether to transfer or not to multiple members and non-members of family or kinship. Different motives triggering these transfers can take place at the same time for different kin members. Many theoretical approaches manage to explain motivation of these interactions, but when it comes to increasing number of different players the explanations become more difficult and complicated. In our approach we used relations of anchors with children and friends to understand more on the simultaneity of transfers. We wanted to understand whether transfers to children and friends are considered as substitutes or complements to each-other. We did this by analyzing co-occurrence of giving and receiving through different sub-groups of the main sample and by looking for possible differences and reasons explaining these differences.

Our main findings from the first part of the analysis suggest that selected characteristics of both anchors and alters influence the probability of transferring. In most cases, age, education, number of children and wealth proxies appear to be significant estimators for the outward transfers. On the other side factors like age, employment status, marital status, moving in a new house, etc, are more significant in determining inward transfers.

The analysis of simultaneity of transfers reveals some more interesting facts. Simultaneous giving or receiving to both children and to child 1/child 2 and friend appear to be positively correlated. Giving to both children has the strongest positive correlation, suggesting that parents tend to be 'equalitarian' when transferring to their children. In a sense, this goes against the general altruism model (the needy get more), suggesting for other motives triggering such transfers. The positive correlation between outward transfers to children and friends from the same anchors suggests instead for evidence sustaining a "warm glow" hypothesis (people tend to give transfers because their utility is also dependent on the act of giving).

Receiving from both children appears to be also significantly correlated (though less than giving). Again, this evidences the general equalitarian pattern in the relationship between children and parents. In this later case, if a child or a friend gives to the anchor in question, the other child is also more likely to give to the same anchor. Although the pattern of giving and receiving is similar the interpretation is different since here the anchor is in a passive rather than active role. The positive correlation here could be indirectly linked with unobserved characteristics of the receiver (i.e. the personal ability to attract transfers from all sources, or certain unobserved events in his/her life).

Looking at the correlations of transfers to/from child 1 and child 2 in relation with those to/from the friend, we observe that both giving and receiving simultaneously to/from children and friends are also correlated. The co-occurrence of receiving from ‘child 1–child 2’ and ‘child-friend’ combinations is generally stronger than giving to the same combinations. This suggests that receiving is triggered by possible specific characteristics of the anchor (unobserved here), and whenever this is the case both children and friends are more likely to remit. Whenever the number of children reported is checked for, these effects appear to be even stronger. The evidence on the ‘crowding out’ hypothesis (claiming the substitution of transfers from friends with transfers from children) is mixed. Our results show that anchors are less likely to give to their children and friends when the number of children increases. But, while the simultaneity of given transfers decreases slightly with the increase of number of children, the simultaneity of received transfers increases. This shows that friends take a more helping role when the anchor has more children.

This later statement is also confirmed by the other findings on the ‘reciprocity’ between giving and receiving (giving and receiving from the same alter). The results sustain a relatively high reciprocity effect for the transfers with the friend, and no significant reciprocity effects for transfers with the children. Reciprocity of transfers with the friend is higher for females and declines sharply for both groups with the increase in the number of children reported. In fact, with the increase in the number of children reported, the corresponding numbers of transfers go down (and this also holds for transfers to/from friends). In fact, the general low incidence of transfers when number of children increases may also affect predicted results. Investigating this, we conclude that with the increase in number of children reported, the transfers to children and friends are negatively affected, but simultaneous giving to children and friends is not significantly affected. On the other hand, what is affected significantly is only the reciprocity of transfers with friends.

This paper draws some important conclusions with regard to the family aspects of financial solidarity. We have shown that in the context of The Netherlands, such transfers do not appear to be driven by altruism. The transfers are directed to both children and they are also likely to be correlated to transfers to friends. Altruism seems to be overtaken by a sense of ‘warm glow’, people who give to one are also likely to give to the others. We have also found that people tend to be reciprocal to their friends, but this reciprocity declines sharply with the increase in number of children.

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Table A1. Child 1 and Child 2 selections for the sub-samples

	Child ordered as Child 1 *		Child ordered as Child 2*	
	Anchor giving to child 1 model	Anchor giving to child 2 model	Anchor receiving from child 1 model	Anchor receiving from child 2 model
	N=3575	N=2792	N=2846	N=2145
Child selected is 1-st Child	2,939	2,232	8	7
Child selected is 2-nd Child	493	429	1,827	1,329
Child selected is 3-rd Child	102	91	701	544
Child selected is 4-th Child	30	29	195	167
Child selected is 5-th Child	1	1	78	67
Child selected is 6-th Child	6	6	24	22
Child selected is 7-th Child	2	2	7	7
Child selected is 8-th Child	2	2	3	2
Child selected is 9-th Child			2	
Child selected is 11-th Child			1	
Total sample	3,575	2,792	2,846	2,145

* Data reporting on children are reordered so child 1 is always the oldest child. Whenever anchor reports only on one child, this is also ordered as child 1.

Table A2. Ways the anchor has contacted the selected friends in the sample

	Number of selected friends	In % to the total
Through work	1209	16.83
Through School or volunteer work	1241	17.27
In the neighbourhood	1551	21.59
Through church	215	2.99
Through sports club	489	6.81
Through other type of club	484	6.74
Through entertainment or party	268	3.73
Through partner	471	6.56
Through friends & acquaintances	559	7.78
Through family	286	3.98
Otherwise	412	5.73
Total	7185	100.00

Table A3. The country grouping for the anchors in the sample

Group of nationalities (by country of birth)	Number of anchors reporting	Countries included		
Dutch	7519	The Netherlands		
Europe and Western Countries	151	Bulgaria	Hungary	United Kingdom
		Canada	Ireland	United States
		Denmark	Iceland	Belarus
		Germany	Austria	Sweden
		Finland	Poland	Switzerland
		France	Portugal	
		Greece	Russia	
			Spain	
Arab and Middle East	37	Afghanistan Algeria Egypt	India Iraq Iran	Pakistan
Latin America	19	Aruba Chili Colombia	Costa Rica Martinique Mexico	Peru Venezuela
Morocco	36	Morocco		
Turkey	36	Turkey		
Antilleans	128	Suriname	Dutch Antilles	
African	19	Congo Eritrea Kenya	Nigeria Zambia South-Africa	Ghana
Asia and Pacific	14	China Philippines Papua New-Guinea	Singapore Sri Lanka Thailand	Vietnam South-Korea
Total reporting	7959			

Table A4. Monthly incomes reported for anchor and partner

	Obs.*	Mean	Std. Dev.
Monthly incomes reported for anchors with no partner			
Anchor employed	2305	0.47	0.50
Anchor's monthly income from employment	1016	1540.98	3198.33
Anchor receives benefits	2305	0.44	0.50
Anchor monthly incomes from various benefits	1013	1187.38	3923.56
Monthly incomes reported for anchors with partner			
Anchor employed	5856	0.60	0.49
Anchor's monthly income from employment	3148	1554.74	1420.47
Anchor receives benefits	5856	0.22	0.41
Anchor monthly incomes from various benefits	1277	1170.34	2439.98
Anchor's partner employed	5856	0.57	0.49
Anchor's partner monthly incomes from employment	3738	1319.97	1455.45
Anchor's partner receives benefits	5856	0.01	0.11
Anchor's partner monthly amount of benefits	59	656.05	532.93

* Numbers of observations for variables of incomes from employment (anchor and partner) and amount of benefits vary depending on the share that receives any of these transfers. For the remaining, a dummy is constructed to account for all missing values

Table A5. Descriptive statistics for transfers from Anchor to Alters models (Anchor giving)

		Giving to Child 1		Giving to Child 2		Giving to Friend	
		Mean	s.d.	Mean	s.d.	Mean	s.d.
Anchor:	Giving financial transfers to Child or Friend	0.23	0.42	0.23	0.42	0.01	0.12
	Anchor Gender: female	0.59	0.49	0.59	0.49	0.60	0.49

Gender and age	<i>(Anchor age less than 35)</i>	0.00	0.07	0.00	0.02	0.29	0.45
	Anchor age between 35-44	0.12	0.33	0.08	0.26	0.24	0.43
	Anchor age between 45-54	0.32	0.47	0.31	0.46	0.20	0.40
	Anchor age between 55-64	0.29	0.45	0.32	0.47	0.15	0.35
	Anchor age 65 plus	0.26	0.44	0.29	0.46	0.12	0.33
Anchor: Children	Anchor number of children	2.62	1.21	2.86	1.17	1.58	1.42
Anchor household	Anchor household size	2.41	1.28	2.29	1.20	2.51	1.34
Anchor and partner: employment status	<i>(Anchor employed)</i>	0.41	0.49	0.37	0.48	0.58	0.49
	Anchor unempl/housewife	0.22	0.42	0.22	0.42	0.17	0.37
	Anchor disabled	0.06	0.25	0.06	0.24	0.05	0.22
	Anchor pensioner	0.29	0.45	0.32	0.47	0.14	0.35
	<i>(Partner employed)</i>	0.33	0.47	0.30	0.46	0.43	0.49
	Partner unempl/housewife	0.14	0.34	0.14	0.35	0.09	0.28
Anchor: Dwelling	Partner pensioner/disabled	0.21	0.40	0.23	0.42	0.11	0.32
	Anchor currently living in detached house	0.22	0.41	0.23	0.42	0.17	0.37
Anchor/Partner: Empl. Income	Anchor's income (ln)	2.43	3.42	2.24	3.35	3.66	3.60
	Anchor's benefits (ln)	2.64	3.37	2.81	3.42	1.76	2.98
	Anchor's partner inc. (ln)	2.74	3.48	2.75	3.47	2.77	3.52
Anchor: Education	Anchor Lower Educ.	0.50	0.50	0.51	0.50	0.33	0.47
	<i>(Anchor Intermed. Educ.)</i>	0.24	0.43	0.24	0.42	0.32	0.47
	Anchor HigherEduc.	0.26	0.44	0.26	0.44	0.35	0.48
Anchor: Marital Status	<i>(Anchor: Married)</i>	0.69	0.46	0.70	0.46	0.54	0.50
	Anchor: Never married	0.02	0.14	0.01	0.11	0.29	0.46
	Anchor: Divorced	0.15	0.36	0.15	0.35	0.10	0.30
	Anchor: Widow	0.14	0.34	0.15	0.35	0.07	0.25
Anchor: Other	Anchor: Current year of moving in the new house	0.01	0.11	0.01	0.11	0.02	0.15
	Born in The Netherlands	0.93	0.26	0.93	0.25	0.93	0.26
	Anchor student					0.04	0.19
	Partner student					0.01	0.10
Alters: Age and Gender	Alter gender: Female	0.50	0.50	0.50	0.50	1.57	0.49
	<i>(Alter age less than 25)</i>	0.32	0.47	0.35	0.48	0.08	0.27
	Alter age 25-34	0.32	0.47	0.37	0.48	0.22	0.41
	Alter age 35-44	0.25	0.43	0.29	0.46	0.24	0.43
	Alter 45+ (Friend 45-54)	0.11	0.31	0.05	0.21	0.21	0.41
	Alter age between 55-64					0.14	0.35
Alters: Education	Alter age 65 and older					0.11	0.31
	Alter currently enrolled	0.23	0.42	0.24	0.43	0.04	0.19
	<i>(Alter intermed. Education)</i>	0.34	0.47	0.37	0.48	0.29	0.46
	Alter low education	0.36	0.48	0.38	0.49	0.28	0.45
Alters: Urbanization and distance	Alter high education	0.30	0.46	0.26	0.44	0.30	0.46
	Alter urbanization (1 low density – 5 high density)	1.95	1.65	1.86	1.64	2.65	1.38
	Alter – Anchor distance (ln)	1.44	1.88	1.42	1.86	1.03	2.18
	N	3574		2846		7176	

Table A6. Descriptive statistics for transfers to Anchor from Alters models (Anchor receiving)

		Receiving from Child 1		Receiving from Child 2		Receiving from Friend	
		Mean	s.d.	Mean	s.d.	Mean	s.d.
Anchor: Gender and age	Receiving financial transfers from Child or Friend	0.02	0.14	0.02	0.14	0.01	0.10
	Anchor Gender: female	0.58	0.49	0.59	0.49	0.60	0.49
	<i>(Anchor age less than 35)</i>	0.00	0.02	0.00	0.00	0.29	0.45
	Anchor age between 35-44	0.04	0.18	0.02	0.12	0.24	0.43
	Anchor age between 45-54	0.28	0.45	0.22	0.42	0.20	0.40
	Anchor age between 55-64	0.36	0.48	0.38	0.49	0.15	0.35
Anchor: Children	Anchor age 65 plus	0.33	0.47	0.38	0.49	0.12	0.33
	Anchor number of children	2.67	1.25	2.87	1.19	1.58	1.42
Anchor	Anchor household size	1.93	0.82	1.78	0.62	2.51	1.34

household							
Anchor and partner: employment status	(Anchor employed)	0.33	0.47	0.28	0.45	0.58	0.49
	Anchor unempl/housewife	0.22	0.42	0.22	0.42	0.17	0.37
	Anchor disabled	0.07	0.25	0.06	0.24	0.05	0.22
	Anchor pensioner	0.36	0.48	0.42	0.49	0.14	0.35
	(Partner employed)	0.26	0.44	0.21	0.41	0.43	0.49
	Partner unempl/housewife	0.14	0.35	0.14	0.35	0.09	0.28
	Partner pensioner/disabled	0.25	0.43	0.29	0.45	0.11	0.32
Anchor: Dwelling	Anchor currently living in detached house	0.22	0.41	0.23	0.42	0.17	0.37
Anchor/Partner: Empl. Income	Anchor's income (ln)	1.98	3.23	1.69	3.06	3.66	3.60
	Anchor's benefits (ln)	3.11	3.47	3.41	3.51	1.76	2.98
	Anchor's partner inc. (ln)	2.55	3.42	2.55	3.41	2.77	3.52
Anchor: Education	Anchor Lower Educ.	0.52	0.50	0.53	0.50	0.33	0.47
	(Anchor Intermed. Educ.)	0.22	0.42	0.22	0.41	0.32	0.47
	Anchor HigherEduc.	0.25	0.43	0.25	0.43	0.35	0.48
Anchor: Marital Status	(Anchor: Married)	0.66	0.47	0.66	0.47	0.54	0.50
	Anchor: Never married	0.02	0.12	0.01	0.08	0.29	0.46
	Anchor: Divorced	0.16	0.36	0.15	0.36	0.10	0.30
	Anchor: Widow	0.16	0.37	0.18	0.38	0.07	0.25
Anchor: Other	Anchor: Current year of moving in the new house	0.01	0.11	0.01	0.11	0.02	0.15
	Born in The Netherlands	0.94	0.24	0.94	0.23	0.93	0.26
	Anchor student					0.04	0.19
	Partner student					0.01	0.10
Alters: Age and Gender	Alter gender: Female	0.52	0.50	0.52	0.50	1.57	0.49
	(Alter age less than 25)	0.15	0.36	0.17	0.38	0.08	0.27
	Alter age 25-34	0.39	0.49	0.46	0.50	0.22	0.41
	Alter age 35-44	0.32	0.47	0.38	0.49	0.24	0.43
	Alter 45+ (Friend 45-54)	0.14	0.34	0.06	0.24	0.21	0.41
	Alter age between 55-64					0.14	0.35
	Alter age 65 and older					0.11	0.31
Alters: Education	Alter currently enrolled	0.07	0.26	0.09	0.28	0.04	0.19
	(Alter intermed. Education)	0.25	0.43	0.27	0.45	0.29	0.46
	Alter low education	0.38	0.49	0.36	0.48	0.28	0.45
	Alter high education	0.37	0.48	0.33	0.47	0.30	0.46
Alters: Urbanization and distance	Alter urbanization (1 low density – 5 high density)	2.47	1.47	2.44	1.46	2.65	1.38
	Alter – Anchor distance (ln)	1.83	1.93	1.86	1.92	1.03	2.18
	N		2795		2148		7176

Table A8. Approximate likelihood-ratio test of proportionality of odds across response categories⁽¹⁾

		<i>Number of observations</i>	<i>Chi squared</i>
Anchor giving financial help to:	Child 1	3574	53.87**
	Child 2	2846	28.10
	Friend	7140	276.67***
Anchor receiving financial help from:	Child 1	2791	84.64***
	Child 2	2148	117.59***
	Friend	7140	206.65***

(1) Results using ordered logit (transfers “0”, “<500 Euros” and “>500 Euros”). A significant test statistics provides evidence that the parallel regression assumption assumption has been violated

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A9. Pair wise correlation of the residuals by age of anchor (and number of children)

Anchor is less or equal to 65 years old

Anchor is less or equal to 65 years old and reports on both child 1 & child 2

	Anchor giving financial help to:			Anchor receiving financial help from:		
	Child 1	Child 2	Friend	Child 1	Child 2	Friend
Ch 1	1					

	Anchor giving financial help to:			Anchor receiving financial help from:		
	Child 1	Child 2	Friend	Child 1	Child 2	Friend

	<i>N</i>	2654					
Anchor rec. from:	Ch 2	0,63***	1				
	<i>N</i>	1989	2013				
	Frnd	0,08***	0,05**	1			
	<i>N</i>	2278	1722	6264			
Anchor rec. from:	Ch 1	0,02	0,01	0,04*	1		
	<i>N</i>	1883	1585	1610	1883		
	Ch 2	0,03	0,04	-0,01	0,64***	1	
	<i>N</i>	1309	1331	1146	1248 1331		
Anchor rec. from:	Frnd	0,06***	0,03	0,20***	0,36***	0,15***	1
	<i>N</i>	2278	1722	6264	1610	1146	6264

Anchor: giving to:	Ch 1	1					
	<i>N</i>	2007					
	Ch 2	0,63***	1				
	<i>N</i>	1989	2013				
Anchor: giving to:	Frnd	0,06***	0,05**	1			
	<i>N</i>	1717	1722	1750			
	Ch 1	0,02	0,01	-0,01	1		
Anchor rec. from:	<i>N</i>	1602	1585	1371	1602		
	Ch 2	0,03	0,04	-0,01	0,64***	1	
	<i>N</i>	1309	1331	1146	1248	1331	
Anchor rec. from:	Frnd	0,05**	0,03	-0,01	0,36***	0,15***	1
	<i>N</i>	1717	1722	1750	1371	1146	1750

Anchor is more than 65 years old

Anchor more than 65 years old and reports on both child 1 & child 2

	Anchor giving financial help to:			Anchor receiving financial help from:			
	Child 1	Child 2	Friend	Child 1	Child 2	Friend	
Anchor: giving to:	Ch 1	1					
	<i>N</i>	920					
	Ch 2	0,80***	1				
	<i>N</i>	820	833				
Anchor: giving to:	Frnd	0,13***	0,13***	1			
	<i>N</i>	730	666	876			
	Ch 1	-0,02	0,06*	-0,03	1		
Anchor rec. from:	<i>N</i>	908	809	722	908		
	Ch 2	0,01	0,08**	-0,01	0,21***	1	
	<i>N</i>	805	817	656	797	817	
Anchor rec. from:	Frnd	0,07**	0,04	0,10***	-0,01	0,02	1
	<i>N</i>	730	666	876	722	656	876

	Anchor giving financial help to:			Anchor receiving financial help from:			
	Child 1	Child 2	Friend	Child 1	Child 2	Friend	
Anchor: giving to:	Ch 1	1					
	<i>N</i>	830					
	Ch 2	0,80***	1				
	<i>N</i>	820	833				
Anchor: giving to:	Frnd	0,13***	0,13***	1			
	<i>N</i>	658	666	671			
	Ch 1	-0,02	0,06*	-0,02	1		
Anchor rec. from:	<i>N</i>	818	809	650	818		
	Ch 2	0,01	0,08**	-0,01	0,21***	1	
	<i>N</i>	805	817	656	797	817	
Anchor rec. from:	Frnd	0,01	0,04	0,01	0,10**	0,02	1
	<i>N</i>	658	666	671	650	656	671

* significant at 10%; ** significant at 5%; *** significant at 1%

Table A10. Logit estimations of the likelihood of financial transfers from anchor (anchor transferring to children)

		Giving to Child 1		Giving to Child 2	
		Coef.	st. error	Coef.	st. error
Shocks to anchor's children	Child has had severe illness in last 12 months	0.28	0.49	-0.18	0.70
	Child has had financial problems in last 12 months	0.33	0.73	1.03	0.69
	Constant	-1.11*	0.65	0.09	-2.17***
	N	3574		2843	
	Log likelihood	-1768		-1407	

Note: Other variables included are same as in Table 3 & 4.

* significant at 10%; ** significant at 5%; *** significant at 1%. Reference categories in brackets.

List of publications

2010		
<i>No.</i>	<i>Author(s)</i>	<i>Title</i>
001	Hercog, M. and A. Wiesbrock	The Legal Framework for Highly-Skilled Migration to the EU: EU and US Labour Migration Policies Compared
002	Salanauskaite, L. and G. Verbist	The 2004 Law on Allowances to Children in Lithuania: What do Microsimulations tell us about its Distributional Impacts?
003	Salanauskaite, L.	Microsimulation Modelling in Transition Countries: Review of Needs, Obstacles and Achievements
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