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Ivo Bischoff and Nataliya Kusa

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Coordination: Bernd Hayo • Philipps-University Marburg
School of Business and Economics • Universitätsstraße 24, D-35032 Marburg
Tel: +49-6421-2823091, Fax: +49-6421-2823088, e-mail: hayo@wiwi.uni-marburg.de

Citizens' preferences for a tax exemption for caregiving heirs – an empirical analysis

Ivo Bischoff,

(corresponding author) Department of Economics, University of Kassel, Nora-Platiel-Strasse 4, 34109 Kassel,
E-mail: bischoff@wirtschaft.uni-kassel.de, Tel. ++49 561 8043033, Fax. ++49 561 8043088.

Nataliya Kusa

Department of Economics, University of Kassel, Nora-Platiel-Strasse 4, 34109 Kassel,
E-mail: kusa@uni-kassel.de, Tel. ++49 561 8047704, Fax. ++49 561 8043088.

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Abstract

We analyze survey data on the proposal to introduce a tax exemption for caregiving heirs to the German inheritance tax. Some 80 percent of the participants support this exemption, about half of those supporting the tax exemption want to see it restricted to relatives. We explain interpersonal differences in policy preferences using a wide range of personal characteristics, beliefs and attitudes. Neither subjects' sex, nor their valuation of the family is found to have an effect while personal experience in long-term care provision and having alive parents strongly shape policy preferences. Subjects with alive parents and/or personal experience in long-term care provision are more likely to support the tax exemption but less likely to support the restriction to relatives. This result supports the bottom line of the recent social science literature on home care provision and intergenerational relations within the family: Many citizens in Germany feel overburdened with caregiving.

JEL-Codes: H27, D31, D72

Key words: inheritance taxation, long-term care, intergenerational transfers, citizens' preferences

1. Introduction

Since their very beginning, human societies witnessed transfers of resources between generations. In modern times, a large share of these transfers in industrialized countries is administered by the state or public social security system. Nevertheless, substantial intergenerational transfers still take place within the family. Some of these transfers are wealth transfers, especially gifts and bequests (e.g., Schupp and Szydlík, 2004; Kopczuk and Lupton, 2007). Bequests from parents to their children and transfers to surviving spouses account the biggest share of all wealth transfers (e.g., Szydlík 2004; Rowlingson and McKay, 2005). In the opposite direction, time, attention and, in particular, long-term care (hereafter LTC) are the main transfers. While some of these transfers may be altruistically motivated (e.g., Barro, 1974; Coall and Hertwig, 2010), the empirical evidence strongly supports the exchange model of intergenerational transfers (e.g., Bernheim et al., 1985). Accordingly, the older generation gives bequests and gifts in exchange for attention, time and LTC they receive from their offspring.

If the exchange motives drives intergenerational transfers, wealth transfer taxes drive a wedge between the monetary “price” the old generation pays for attention and LTC and the remuneration the middle generation receives. Other things equal, this tax wedge reduces the intensity of exchange between generations.

Four long-term trends make the tax wedge from wealth transfer taxation and its consequences for intergenerational transfers politically relevant. First, the industrialized world witnesses unprecedented private wealth transfers flowing from the generation born after World War II. Wiktor (2010) estimates the wealth transfers per decade to exceed \$ 4 trillion until 2060. Second, the industrialized world experiences an unprecedented increase in the number of people needing LTC and in the intensity of care needed. Even though demographic change aggravates this problem, it is primarily driven by the large increase in the individual probability of needing LTC when elderly and the increase in the average time period that people require LTC services

if in need (e.g., Colombo et al., 2011; Huber et al., 2012). Third, many industrialized countries have accumulated massive public debt and face increased fiscal pressure (e.g. Ali Abbas et al., 2011). Finally, the distribution of wealth has become increasingly unequal in the last decades. The upcoming wealth transfers are likely to aggravate this problem (e.g., Piketty, 2014).

Wealth transfer taxation could be one element in a strategy to meet the latter challenges, i.e. reduce fiscal pressure and the inequality in distribution of wealth (e.g., Atkinson 1980, Gale and Slemrod, 2001; Bossmann et al., 2007). Given the volume of wealth transfers expected, much could be accomplished even if wealth transfers are taxed at moderate rates only. However, they come at the price of interfering with intra-familial exchange relations in times of increased need for LTC. This runs against the strong preferences of elderly people to receive LTC services in their private homes rather than in nursing homes (e.g., Eurobarometer, 2007). Given that wealth transfer taxes are highly unpopular in many countries already (e.g., Ernst & Young, 2013), their impact on private home care arrangements is likely to reduce their popularity even further.

One way to make use of the huge tax base of wealth transfers without discouraging private caregiving is to introduce a special tax exemption for wealth transfers given to caregiving recipients. There are, of course, a number of arguments that stand against this tax exemption. For instance, administrative costs are likely to be high and this rule may open a loophole for tax evasion. In addition, it violates the principles underlying existing tax systems. On the other hand, this tax exemption has the potential to increase public support for the otherwise unpopular wealth transfer taxation. So far, however, we know very little about the public opinion on the idea to install tax exemption for caregiving heirs in wealth transfer taxation. This is where our paper comes in. We analyze data from a representative survey among German citizens in 2014 and 2015. In this survey, subjects are asked whether they support the introduction of a tax

exemption for caregiving heirs. We use this survey data to learn more about the factors that make some subjects support the tax exemption while others oppose it.

Our results can be summarized as follows. In total, 80 percent of the respondents support the tax exemption for caregiving heirs. Subjects are more likely to support the tax exemption if they adhere to the social norm of indirect reciprocity or overestimate the tax burden of the German inheritance tax. We find no difference between the policy preferences of men and women, nor do we find policy preferences to depend on the valuation of the family. On the other hand, we find support for the tax exemption to be higher among subjects whose parents are alive and among subjects who have been personally involved in providing LTC to relatives

The survey data allows us to go one step further: About half of the citizens who support the tax exemption want to see it restricted to relatives (while the other half opposes this restriction). We go on to analyze the factors that make some citizens support this restriction and others oppose it. Again, we find no influence of subjects' sex or their valuation of the family but a strong impact of having alive parents and/or personal experience in LTC provision. Citizens with alive parents and/or personal experience in LTC provision are more likely to oppose the restriction. We see this result as a clear indication that many citizens in Germany feel overburdened with caregiving and do not want a restricted tax exemption to increase the social pressure on them. This result is well in line with the recent social science literature on this issue.

The remainder of the paper is organized as follows: Section 2 provides a brief review of the relevant literature and section 3 introduces the reader to the German institutional background – in particular, the typical long-term care arrangements made in Germany and the essential features of the German inheritance tax. In section 4, we present the data and essential hypotheses. Section 5 presents the empirical analysis. The results are discussed in section 6. Section 7 concludes.

2. Review of Literature

There is a large body of literature on intergenerational transfers and wealth transfer taxation. These studies show that the flow of intergenerational transfers and its reaction to wealth transfer taxation crucially depends on the motives driving the transfers.¹ Some scholars argue that transfers from the older to the younger generation are motivated by altruistic motives, i.e. the wish to support their offspring (e.g., Barro, 1974; Coall and Hertwig, 2010). The amount transferred and its division among the children (or other heirs) does not depend on whether the latter provided long-term care in exchange. According to the exchange model of intergenerational transfers, monetary support from the older to the younger generation is given in exchange for transfers the parents themselves received from their children. These transfers comprise long-term care, attention and access to the grand-children (e.g., Bernheim et al., 1985; Geurts et al., 2012). In this case, bequests are the “final payment” in a reciprocal relationship between generations. The literature has compiled a number of studies indicating that this form of reciprocal exchange is empirically relevant. In their study on intergenerational transfer relations in 12 European countries, Leopold et al. (2014) find that children who expect future benefits in the form of parents’ bequests and life insurance benefits are more likely to provide long-term care. Angelini (2007) indirectly supported the hypothesis that parents use bequests to induce their offspring to provide the attention to them. These results do not rule out the relevance of altruistic motives. However, they strongly suggest that the exchange model of intergenerational transfers is empirically relevant.

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There are numerous studies focusing on the macroeconomic consequences of wealth transfer taxation. A particular emphasis rests on the impact on efficiency (capital accumulation) and inequality in wealth and income (e.g., Gale and Slemrod, 2001; Grossmann and Poutvaara, 2009; Kaplow, 2010; Cremer and Pestieau, 2011). These studies suggest that citizens’ policy preferences may be influenced by whether or not they expect wealth transfer taxation to have a timing effect (e.g., Joulfaian, 2001). However, the literature does not provide strong arguments why a tax exemption on caregiving heirs may be more or less harmful if one of the two motives – exchange or altruism – dominates intergenerational transfers.

Empirical studies on the division of wealth transfers between siblings inform us that there is a strong tendency to split them equally (e.g., Wilhelm, 1996; McGarry, 1999; Cox, 2003). In other words, having given long-term care to parents or other relatives does not generally lead to a reward in the form of higher postmortem wealth transfers (e.g., Norton and Taylor, 2005). On the other hand, unequal splits are much more common when it comes to inter vivos transfers. The division is found to follow both altruistic motives and the idea of reciprocal exchange (e.g., Light and McGarry, 2004; Leopold and Schneider, 2011). For instance, Norton et al. (2013) analyzes data from National Longitudinal Survey of Mature Women and find that parents are more likely to give inter vivos transfers to siblings who provided informal care than to siblings who did not care.

The question whether the exchange or altruistic motives dominates intergenerational transfer relations is crucial when it comes to assessing the impact of wealth transfer taxation. In the logic of the exchange model of intergenerational transfers, wealth transfer taxes place a tax wedge between the price parents pay for attention and long-term care and the price children receive for their services. This tax wedge reduces the incentives for children to provide long-term care to their parents and/or increase the wealth parents need to transfer in exchange for long-term care and attention. This effect does not emerge when wealth transfers are driven by altruistic motives.

Next to the literature on intergenerational transfers and wealth transfer taxation, our study builds on the existing studies on citizens' policy preferences regarding taxation. These studies show that self-interest plays an important role: Subjects who expect to be burdened heavily by a certain tax tend to oppose this tax (e.g., McCaffery and Baron, 2006; Ansolabehere, 2007). In addition, fairness preferences shape citizens' policy preferences on taxation (e.g., Sabatini et al., 2014). The number of studies that focus explicitly on wealth transfer taxation so far is lim-

ited. They support the notion that self-interest matters also when it comes to subjects' preferences on wealth transfer taxation (e.g., Hammar et al., 2008; Page et al., 2013).² Furthermore, Slemrod (2006) shows that subjects generally expect wealth transfer taxes in the US to burden more citizens than it actually does. The acceptance of wealth transfer taxation is higher among those who have a more accurate view on the fraction of citizens actually taxed (e.g., Kuziemko et al., 2013; Sides, 2015).

There is a recent paper by Bischoff and Kusa (2015) which is of particular relevance for the current analysis. Based on German survey data, the paper asks subjects about their policy preferences regarding the inheritance tax – the form of wealth transfer taxation applied in Germany and many other European countries. It focusses on the general acceptance of inheritance taxation and asks subjects whether they agree that inheritances beyond a certain amount should generally be taxed. Some 40 percent of respondents agree that inheritances should be taxed while almost 60 percent oppose inheritance taxation. The paper supports previous studies in showing that tax preferences are by material self-interest: Acceptance for inheritance taxation is higher among subjects whose parents are dead while it decreases in household income. Subjects who overestimate the effective tax burden are more likely to oppose inheritance taxation. Redistributive aspects are also found to matter: Believing that wealth transfers flow primarily to high-income households increases support for inheritance taxation. Bischoff and Kusa (2015) go beyond the existing literature and look how subjects' experiences in intergenerational transfer relations in general shape their policy preferences. They find that women who are typically

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Wrede (2013) provides a study on the role of tax planning on citizens' policy preferences on taxing the transfer of family-owned firms in Germany. Specifically, he asks for the acceptance of a tax exemption for the transfer of family-owned firms that leaves this type of transfer largely untaxed while a comparable transfer of other assets would lead to a substantial tax burden. He shows that policy preferences strongly depend on citizens' assumptions regarding the bequeathers' motive. The acceptance for tax exemptions for the transfer of family-owned firms is high when the firm exists for a long time. If, however, a terminally ill person founds a family-owned firm with the aim to save taxes, the acceptance for the tax exemption is low.

at the heart of intergenerational exchange relations are more likely to oppose inheritance taxation than men. At the same time, subjects' individual experience in having witnessed LTC in the family or providing LTC services personally does not influence their policy preferences.

3. Long-term care and wealth transfer taxation in Germany

Like many other countries, Germany witnesses an unprecedented increase in wealth transfers from the old generation. For the current decade, transfers are expected to amount to €4.6 billion (e.g., Sieweck, 2011). Germany taxes wealth transfers using an inheritance tax. Here, the recipient of wealth transfers is the taxpayer and the tax is levied on the monetary value of transfers received. Tax exemptions and tax rates mainly depend upon the degree of kinship between heir and bequeather. For the latter's spouses, the tax exemption amounts to €500.000, for children €400.000, grandchildren and great grandchildren €200.000, and parents €100.000. The exemption for other beneficiaries is only €20.000. The tax rate on transfers exceeding these exempt amounts increases as the degree of kinship decreases – starting from an initial 7 percent for children and spouses and rising up to an initial rate of 50 percent for non-relatives. The inheritance tax is accompanied by a gift tax that applies essentially the same tax schedule to inter vivos transfers in order to prevent tax avoidance through near-death transfers. The gift tax allows for additional tax-free inter vivos transfers as long as the amount received per decade do not exceed a certain limit. This tax exemption can be used every 10 years. Inter vivos transfers dating back less than 10 years are taxed together with the postmortem wealth transfers when the bequeather dies.

[Figure 1 about here]

Simultaneous to the increase of wealth transfers sketched above, Germany witnesses a massive increase in the number of elderly people requiring long-term care. For 2007, the Federal Statistical Office counted 2.25 million citizens officially registered to require LTC (e.g., Scheiwe and

Krawietz, 2010). Hereafter, we differentiate five categories of LTC (see figure 1). Category A comprises all citizens who reside in a nursing home and receive LTC services from professionally trained personnel. Roughly, one third of the care-recipients belongs to this category. The vast majority receives LTC services in the privacy of their own home (hereafter home care). The dominant role of home care is in line with surveys reporting that the German population strongly prefers home care to care in nursing homes (Eurobarometer, 2007). Among those 1.5 million citizens who receive home care, approximately 500.000 receive services from professional nursing services (full-time or supplementary, category B). The remaining two thirds (approx. 1 million citizens in 2007) receive home care without noteworthy support from professional nursing services (category C-E). Such non-professional caregivers also provide complementary services to many subjects in category B. Thus, non-professional home care of category C-E plays a role in far more than 1 million cases. Among the non-professional caregivers, relatives are the largest group by far (category E). Their services are often called informal care (e.g., Graham, 1991: 508).³ Caregivers often reduce their working hours when they start to provide LTC to a close relative. About 15 percent of them stop working entirely (e.g., Schmidt and Schneekloth, 2011).⁴ Thus, they incur income losses when providing LTC. Category C and D capture LTC-services provided by non-relatives who do not work for nursing services but exclusively for the care-recipients. These non-relatives comprise illegal migrants from low-income countries (category C) as well as legal German residents providing home care in other families' households (category D). The empirical relevance of category C and D is difficult to

³ By the definition provided by Graham (1991), informal care may also be provided by non-relatives like friends or close neighbors as long as these are not paid for their services. In our opinion, it seems unlikely that neighbors and friends are willing to provide long-term care for a longer period in time without any remuneration in exchange. Therefore, we included the category D.

⁴ The hours of work of caregivers are sensitive to the change in hours of care they provide. Colombo et al. (2011) shows that 1% increase in hours of informal care leads to more than 1% decrease of working hours. Women in European countries are more likely to stop working than to reduce their working hours.

quantify because they are mostly based on informal contracts.⁵ Pedelabar (2012) provides a landmark for the relevance of category C: He estimates that approximately 100.000 female migrants work fulltime in providing LTC to German citizens in 2010.

Regarding the contractual arrangements between receiver and provider of LTC, the five categories differ considerably. In categories A – B, the nursing services charge fees for their services. This remuneration is settled in a formal contract between care-recipients and the nursing services. For category C –E, we know little about the contractual arrangements. Relatives (category E) may provide LTC without wanting anything in exchange, e.g. because they feel morally obliged (e.g., Norton and Van Houtven, 2006; Norton et al., 2013). If a remuneration exists, they may receive a regular pay for their services, much like a wage (hereafter wage contract) or they may expect a wealth transfer that remunerates them for their services. Often, this wealth transfer is given postmortem, in the form of a bequest. This form of arrangement is attractive in cases where the care-recipient owns real estate but has only insufficient liquidity to pay an adequate wage on a regular basis. Hereafter, we call this arrangement bequest contract. In reality, wage and bequest contracts can be mixed. In this case, the caregiver receives regular payments plus some bequest in the end. In category E, wage and bequest contracts are not settled in formal agreement but rather in an informal possibly implicit contract. The bequest contract is only possible if there is sufficient trust between relatives. In addition, parents have to be willing to discriminate between siblings and grant higher wealth transfers to the child who provided LTC.

In category C and D, the adequate contractual relationship between provider and receiver of home care is a formal labor contract as soon as the home care services are provided on a regular

⁵ The estimated numbers are taken from Scheiwe and Krawietz. (2010) and Kluzer et al. (2010).

basis. This labor contract has to be reported to the social security and tax authorities and entails tax payments and contributions to the social security system. In many cases, however, formal wage contracts do not exist and taxes and social contribution payments are not paid. Instead, the arrangement is informal and the exchange of services and pay is part of the shadow economy. Theoretically, these arrangements can take the form of wage contracts or bequest contracts. However, a bequest contract with non-relatives is difficult to arrange. First, this form of arrangement requires a high level of trust between contractors. Second, larger (postmortem) wealth transfers are difficult to hide from government authorities – especially if they involve real estate and/or foreigners are the beneficiaries. If, however, they are executed openly, the tax wedge from the inheritance tax is substantial. Thus, most arrangements in category C and D will take the form of informal wage contracts offering the caregiver an immediate pay for their services (possibly plus board and lodging).

Given the tax schedule and the pattern of arrangements in LTC described above, three things become immanent: First, large inter vivos transfers given to the caregivers are subject to the inheritance tax in the end because LTC usually becomes necessary in the final phase of life. Second, wealth transfers received by close relatives – especially spouses and children – are not subject to a large tax wedge as long as the overall inheritance is moderate in size. Once the wealth transfer to caregiving relatives exceeds the limit of this exemption, however, the tax wedge becomes relevant. As income and wealth are correlated, the tax wedge is more likely to be relevant in high-income families. Third, non-relatives providing home care (category C and D) face a substantial tax wedge when receiving part of their remuneration in the form of (post-mortem) wealth transfers. Thus, offering them part of the estate as final payment for their services is no attractive option for them under the present inheritance tax legislation – even if the bequeather can credibly commit on this form of payment. A tax exemption for caregiving heirs

would change the attractiveness of bequest contracts substantially if it applies to the category C and D.

4. Data and hypotheses

In the current paper, we analyze citizens' policy preferences a reform proposal for the German inheritance tax. It proposes to introduce a tax exemption for recipients of wealth transfers who gave LTC to the person transferring the wealth. Two questions are addressed:

- 1) Why do some citizens support the tax exemption for caregivers while others oppose it?
- 2) Why do some citizens want to restrict the tax exemption to relatives?

To answer these questions, we employ the GESIS survey⁶ conducted by Leibniz Institute for social sciences in Mannheim, Germany.⁷ The survey covers individuals aged between 19 and 71 living in Germany and is representative for the German population. For our analysis, we used a sample of more than 1.400 individuals. GESIS invited researchers from various fields to submit blocks of questions. The blocks of questions that successfully passed a review process were implemented in the survey. We make use of the answers to questions on intergenerational relations, LTC and inheritance taxation we successfully submitted to GESIS. In addition, we draw on the rich pool of additional variables the survey provides. When describing the data in the upcoming sections, we will refer to all questions that we submitted to GESIS as our questions. All other questions are attributed to GESIS without differentiating between questions created by the GESIS team and questions submitted by other scientists. Full descriptive statistics are provided in the appendix.

6 Database-version: ZA5665. GESIS panel incremental codebook retrieved from www.gesis.org.

7 The same survey as our recent paper on the general acceptance of inheritance taxation (see section 2).

4.1 Question 1: Should there be a tax exemption for caregiving heirs?

We introduced a question that asks subjects for their policy preferences regarding a possible tax exemption for caregiving heirs. It reads as follows:

”At present, a reform of the inheritance tax is discussed... What is your opinion? Should there be an inheritance tax exemption for heirs who provided LTC to the deceased person? ...”

a) self-interest factors

The existing literature clearly shows that policy preferences on taxation are driven by self-interest: Citizens are more likely to oppose taxes and consequently support tax exemptions if they expect taxes to burden them. This suggests that citizens’ support for a tax exemption increases in the tax burden they expect for themselves – either directly or indirectly by burdening subjects who provide LTC to them in case this is necessary. We introduce five variables to capture subjects’ self-interest.

First, the variable PARENTS_ALIVE takes on the value 1 for all subjects whose parents are living (0 else). Subjects whose parents are still alive are more likely to provide LTC for them and are therefore more likely to benefit from the tax exemption. We expect a positive sign. Second, we ask subjects for the distance between their own home and their parents’ home and construct the variable PARENTS_DISTANCE_30MINPLUS. It takes on the value 1 if the distance between subjects and their parents is 30 driving minutes or more (0 else). Living far away from one’s parents decreases the possibility of providing LTC to them and therefore, make the parents dependent on external caregivers. Furthermore, it reduces the expected benefit from the tax exemption – other things equal. On the other hand, these subjects may nevertheless feel obliged to see their parents receiving LTC services in their own home. In this case, the tax exemption will make it easier for them to find non-relatives to provide home care (e.g., Norton

and Van Houtven, 2006). This argument stands against the monetary self-interest. Thus, we have no clear prediction for the sign for PARENTS_DISTANCE_30MINPLUS. Third, the empirical literature shows that women provide by far the largest share of home LTC (e.g., (e.g., Haberkern and Szydlik 2008; European Union, 2012; Adam and Mühling, 2014).⁸ In addition, the probability of requiring LTC is substantially higher for women than for men (e.g., BPA, 2003; Larsen et al., 2009). Thus, women are more likely to benefit from the tax exemption. A dummy variable FEMALE captures subjects' sex.

In most cases, where relatives provide home care, this is done by spouses or children. Both benefit from high tax exemptions and low marginal tax rates (see section 3). Thus, subjects who have close relatives do not have to expect a high tax wedge if they want to remunerate for LTC through wealth transfers. This is different for subjects without close relatives. The inheritance tax places a substantial tax wedge between the price they pay for receiving LTC and the price potential caregivers receive. Moreover, they miss close relatives who feel morally obliged to provide them with LTC. Thus, we expect subjects without close relatives to be more supportive of the tax exemption. NO_CHILDREN takes on the value 1 for all subjects who do not have children (0 else) and NOT_MARRIED that takes on the value 1 for the subjects who are neither married nor in civil union (0 else). We expect positive sign for both variables.

b) personal experience and involvement in long-term care

We expect subjects' policy preferences regarding the tax exemption for caregiving heirs to depend on their personal experience and involvement in LTC. The variable GAVE_CARE_PERS takes on the value 1 for all subjects who stated that they were involved in providing LTC to a relative for a period of three months or longer (0 else). Here, caregiving includes occasional

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The same holds for long-term care services in nursing homes. According to German Federal Statistical Office, some 80% of formal caregivers in nursery houses are females.

assistance while the main caregiving was in the hands of others, including commercial providers. These subjects may expect an inheritance in exchange and support the tax exemption for self-interest reasons. At the same time, they know how much work it is to provide a long term-care. Having this knowledge, they may like to see more support for caregivers and thus support the tax exemptions because it make it easier to organize support. Thus, we expect a positive sign for GAVE_CARE_PERS. The same holds for CARE_IN_FAMILY. It takes on the value 1 for subjects who stated that a member of their greater family received LTC in the last 5 years (0 else). It captures the knowledge about LTC and sensitivity about this issue.

c) valuation of the family

Next, we account for subjects' view on the importance of the family (e.g., Arrondel and Mason, 2013). Subjects who consider the family to be very important are likely to be more concerned about the tax wedge because it may weaken intergenerational family relations. Thus, they are more likely to support the tax exemption. We expect subjects who live in the same house with their parents to value the family higher than those who do not. The variable PARENTS_SAME_HOUSE captures this effect. It is 1 for subjects who live in the same house as their parents (0 else). Based on general survey questions, we also construct the variable FAMILY_MOST_IMPORT. It takes on the value 1 for those who stated their family to be important or very important to them, while at the same time stating that education and leisure are less important (0 else). We expect a positive sign for both variables.

d) beliefs and social norms related to intergenerational transfers and their taxation

According to the theory of sociotrophic voting, voters take a general perspective: Policies that are viewed to improve overall welfare are supported while policies that reduce welfare are not supported (e.g. Paldam, 2004; Bischoff and Siemers, 2013). In the case of the tax exemption for caregiving heirs, subjects are more likely to support the exemption if they are concerned

with a negative impact of the tax wedge on intergenerational exchange relations. This expected impact in turn is driven by subjects' economic beliefs and attitudes towards social norms.

First, the support for the tax exemption depends on subjects' view regarding the trust of the old generation in their descendants. If this trust is high, older people may give inter vivos transfers to the prospective caregiving relative even before the need LTC. This reduces the tax wedge because of separate tax exemptions for inter vivos transfers. In addition, inter vivos transfers are difficult to observe by the tax authorities and thus do not entail a tax wedge. However, if the old generation's trust in its descendants is low, old people will refrain from transferring wealth inter vivos because they fear to lose their financial independence. In this case, the tax wedge is more likely to apply. We ask subjects whether they believe that old people refrain from giving inter vivos transfers because they fear to become dependent on their offspring. Based on the answers, we construct the variable `OLD_FEAR_DEPENDENCE`. It takes on the value 1 for subjects who believe this (0 else). We expect a positive sign.

Second, we elicit subjects' adherence to the norm of indirect reciprocity. Arrondel and Masson (2001) argue that the young often provide the old with attention and LTC because they observed their parents to have done the same when the latter were young. Arrondel and Masson (2001) argue that having observed intrafamilial transfers among preceding generations creates a social norm that is passed on together with the wealth, attention etc. We capture subjects' adherence to the social norm in a question on inter vivos transfers that parents give to their children. The question confronts subjects with two statements. 1) People who receive start-up support from their parents are morally obliged to support their own children in the same way. 2) Every generation has to decide for itself whether to give their children start-up support. Subjects are asked to tick the statement that more closely represents their own view. We construct a dummy variable `IND_RECIPROCITY` that takes on the value 1 for subjects who tick the first statement (0 else). It captures the degree to which subjects generally adhere to indirect reciprocity as a social

norm. We expect that subjects who adhere to this norm are more concerned about the tax wedge because it increases the costs of following this norm. To some extent, ticking the first option may also express subjects' valuation of the family (see c) above). In any case, a positive sign is expected.

Third, building on the results by Slemrod (2006) and Sides (2015), we expect subjects' policy preferences to depend on the perceived tax burden from inheritance taxation. The higher the perceived burden, the more likely they are to support the tax exemption. This hypothesis may be driven by sociotropic considerations because the size of the tax wedge depends on the perceived tax burden. But it may also be driven by material self-interest because subjects who overestimate the tax burden are more likely to expect to be burdened personally. We ask subjects to state the tax liability of a child inheriting a bank deposit with 100.000 €. We construct a dummy variable `TAX_OVEREST` that takes on the value 1 for those who overestimate the tax burden and thus the tax wedge for caregiving relatives (0 else). We expect a positive sign for the coefficient estimator.

Fourth, given the theoretical importance of Ricardian equivalence, we ask subjects whether they believe that parents in Germany neutralize the intergenerational consequences of government policies by adjusting savings. Those who believe that a large part of parents in Germany behave this way are classified as Ricardians (`RICARDO` = 1, 0 for others). The `RICARDO`-variable serves as an indirect measure for subjects' belief that wealth transfers from parents to children are motivated by altruism. The sign of `RICARDO` is not clear ex ante. On the one hand, the literature in section 2 suggests that the negative impact of wealth transfer taxes on intergenerational exchange is less severe when transfers are motivated by altruism. On the other hand, Ricardians may have a higher valuation of the family and are thus more supportive of the tax exemption.

e) generation-specific perspectives

Depending on their age, subjects are likely to have distinctly different perspectives on the topic of inheritance and LTC: The old cannot expect any inheritance from their parents but they are likely to require LTC. The young are neither likely to receive sizeable bequests in the near future (e.g., Szydlik and Schupp, 2004; Wolff and Gittleman, 2014), nor to require or give LTC. The middle generation can expect wealth transfers from their parents – provided these have accumulated wealth. But they are also likely to be confronted with the question whether or not to provide LTC to their parents. To account for the generation-specific perspective, we classify individuals as “old” (born before 1955) and “middle” (born between 1956 and 1975). The dummy variables OLD_GENERATION and MIDDLE_GENERATION capture these categories.

f) control variables

Finally, introduce a number of control variables. We ask our subjects whether they expect to receive an inheritance in the near future. The dummy variable EXPECT_INH is 1 for all subjects who do (0 else). We construct a dummy HIGH_EDU that takes on the value 1 for subjects whose school education qualifies them to enter higher education (0 else). We control for household income of subjects by calculating natural log of the equivalent household income HH_INCOME using the OECD-square-root-rule (OECD, 2008).⁹ Finally, we control for citizens’ trust in the (federal) government. The lower the trust, the more reluctant citizens are to support any kind of tax and therefore, the more likely they are to support tax exemptions. The variable GOV_TRUST is 1 for those subjects who have much or very much trust in the local government (0 else).

⁹

It is calculated using classified income data. We assumed that household’s income equals the middle value of the range they reported the income to be in. The highest category [6.000 Euro or more] was excluded.

4.2 Question 2: Should the tax exemption be restricted to caregiving relatives?

So far, we concentrated on our first research question: Which factors determine whether subjects support or oppose the introduction of a tax exemption for caregiving heirs in the German inheritance tax. In the survey, subjects who supported the tax exemption had to decide whether the tax exemption should be available to all caregiving heirs or whether it be restricted to caregiving relatives. This distinction leads to our second question: Which factors determine whether subjects want to see the tax exemption restricted to relatives?

The answer to this question is likely to depend on subjects' view on the importance of the family. Subjects who consider the family to be very important may fear that the intergenerational links within the family are weakened if non-relatives have the opportunity to benefit from the tax exemption. Therefore, they are more likely to support a restriction of the tax exemption only for caregiving relatives. We expect a negative sign for `FAMILY_MOST_IMPORT` and `PARENTS_SAME_HOUSE`.

The sociological literature informs us that many subjects who gave care to relatives report felt severely overburdened and found it difficult to organize external help or relief (e.g., McCarty et al., 2008, Schmidt and Schneekloth, 2011). This suggests that personal involvement reduces subjects' support for a restriction of the tax exemption to relatives. Thus, we expect a negative sign for `GAVE_CARE_PERS` and `CARE_IN_FAMILY`.

From a self-interest perspective, it is straightforward to argue that subjects who do not have close relatives oppose the restriction to relatives. Thus, we expect a negative sign for `NO_CHILDREN` and `NOT_MARRIED`. The variables `PARENTS_DISTANCE_30MINPLUS` and `HIGH_EDU` (e.g., Blinkert and Klie, 2000 and 2001) identify subjects who would have to bear very high costs when having to provide care personally. Thus, they are more likely to oppose the restriction to relatives.

The conclusions are less straightforward for PARENTS_ALIVE. If individuals whose parents are alive provide LTC to their parents or plan to do so in the future, the restricted tax exemption makes it more costly for their parents to hire an external person for home care. Thus, the restricted tax exemption increases the children's negotiating power with their parents. This argument suggests that subjects whose parents are alive should favor restricting the tax exemption to relatives. On the other hand, one may argue that they feel overburdened with their social environment expecting them to provide home care to their parents if this becomes necessary. In this case, restricting the tax exemption to relatives tends to lock them in to this obligation. This argument suggests that subjects whose parents are still alive are may be more likely to oppose the restriction to relatives. In other words, relatives may either see non-relatives as competition reducing the expected inheritance for themselves or they may see them as relief to help them escape the lock-in. Depending on the dominating view, citizens who await to give care to relatives are more or less likely to support restricting the exemption. Thus, we have no clear prediction on the sign of PARENTS_ALIVE.

An analogous trade-off also applies to older people who expect to need LTC in the near future. The restrictive tax exemption amplifies the social obligation of their children to provide home care, but it also hampers the opportunity to receive home care by non-relatives. Again, it is difficult to say ex ante which of the two arguments is stronger.

The empirical literature suggests that the above arguments apply more strongly to women: They are more likely to provide LTC and sociologists argue that the moral obligation to take care of their parents is stronger for daughters than for sons (e.g., Mui, 1995; McCarty et al., 2008). In addition, women are more likely to receive LTC. Given the contradictory arguments, we have no clear prediction regarding the sign of FEMALE.

Finally, we control for EXPECT_INH, HH_INCOME, TAX_OVEREST, RICARDO, IND_RECIPROCITY and MIDDLE_GENERATION.

5. Empirical Analysis

The endogenous variables for our analysis are generated by subjects' answers to the question in box 1. Almost 80 percent support the proposal to introduce a tax exemption for heirs who have provided LTC to the bequeather, i.e. ticked option (2) or (3). Among them, 48 percent support a tax exemption only for caregiving relatives, i.e. ticked option (3).

[Box 1 about here]

We want to know which factors make subjects answer differently. More precisely:

- 1) Why do some citizens support a tax exemption for caregiving in the inheritance tax while others oppose this tax exemption?
- 2) Why do some citizens want to restrict the tax exemption to relatives?

5.1 Methodological issues

The way the question is presented suggests that subjects' decision process is best modelled as a simultaneous choice between three alternatives. In this case, a multinomial approach is the adequate empirical model. On the other hand, one might argue that subjects' decision process is better modelled as a two-stage process: Subjects first decide whether to support the tax exemption in general (question 1). In stage 2, those who support the tax exemption in general decide whether it should be restricted to caregiving heirs (question 2). In this case, the two decisions should be analyzed consecutively. The possible interdependence between the two stages can be tested using a Heckman-approach. If the test statistic does not support the existence of a selection effect, the two steps of subjects' decision process when answering the question in box 1 is best analyzed in two separate regressions – one for question 1 and one for question 2.

We estimate all three different models. Regardless of the specification, the Heckman regressions never indicated that the two steps are dependent. Thus, two separate regressions on question 1 and 2 are the adequate empirical model to map the two-stage decision model. The results of these regressions are presented in section 5.2 and 5.3 before section 5.4 turns to the results of the multinomial regressions.

5.2. Empirical results on question 1:

Should there be a tax exemption for caregiving heirs?

The aim of our analysis is to identify why some citizens support a tax exemption for caregiving heirs in the inheritance tax while other oppose this tax exemption. Our endogenous variable TAX_EXEMPT_YES is a binary variable that takes on the value 1 for subjects who support a tax exemption for heirs who provided LTC to the deceased person (i.e. ticked option (2) or (3)) and takes on the value 0 for subjects who do not support this tax exemption (i.e. ticked option (1)). The value 1 is assigned regardless of whether or not subjects want to see the tax exemption restricted to relatives. We use a Probit-model to estimate the impact of the exogenous variables on subjects' general acceptance of tax exemption (see Table 1).

[Table 1 about here]

The baseline model in column 1 includes all exogenous variables described in section 4.1. Among the variables capturing subjects' self-interest, FEMALE, NOT_MARRIED, NO_CHILDREN and PARENTS_DISTANCE_30MINPLUS are insignificant, but PARENTS_ALIVE is significant with positive sign: Subjects whose parents are alive are more likely to support the tax exemption. Regarding personal experience and involvement in providing LTC, we find GAVE_CARE_PERS to be significantly positive as predicted while CARE_IN_FAMILY is insignificant. The variables covering subjects' general beliefs are par-

tially significant: In line with our prediction, subjects who believe in norm of indirect reciprocity and/or overestimate the real tax burden from inheritance taxes are more likely to accept the tax exemption (IND_RECIPROCITY; TAX_OVEREST). The variables capturing subjects' view on the importance of the family (FAMILY_IMPORTANT, PARENTS_SAME_HOUSE) are insignificant. HIGH_EDU is significant with a negative sign. All other variables are insignificant.

Looking at the numerous biographical variables, one might be concerned that NO_CHILDREN, NOT_MARRIED, PARENTS_ALIVE, PARENTS_SAME_HOUSE and PARENTS_DISTANCE_30MINPLUS jointly explain our generational dummies. To control for this concern, we drop OLD_GENERATION and MIDDLE GENERATION in model 2. The performance of the other exogenous variables does not change. In model 3, the natural logarithm of age (LN_AGE) is included instead of the generational dummies. The results do not change.

Looking at the marginal effects (labelled ME in table 1), we see that TAX_OVEREST reveals the largest marginal effect of +9 percentage points, followed by HIGH_EDU with -8 percentage points and PARENTS_ALIVE with +8 percentage points. IND_RECIPROCITY and GAVE_CARE_PERS increase the probability of supporting tax exemption by 6 and 5 percentage points respectively.

5.3 Empirical results on question 2:

Should the tax exemption be restricted to caregiving relatives?

We now turn to step 2 of the two-stage decision model and explore why some citizens want to restrict the tax exemption to caregiving family members. Again, a Probit-model is used. The endogenous variable RESTRICT_FAMILY is 1 for those who ticked option (3) and 0 for those who ticked option (2). Subjects who oppose the tax exemption (i.e. ticked option (1)) are excluded from the analysis. The results are presented in table 2.

[Table 2 about here]

The baseline model in column 1 includes all exogenous variables described in section 4.2. As predicted, GAVE_CARE_PERS is significantly negative while the variables capturing family values are insignificant. Among the variables measuring subjects' self-interest, NOT_MARRIED, NO_CHILDREN and HIGH_EDU are insignificant. On the other hand, subjects whose parents are alive and subjects whose parents live far away (30 driving minutes or more) are less likely to restrict the tax exemption. The latter result is in line with our prediction in section 4.2. MIDDLE_GENERATION and FEMALE are insignificant. EXPECT_INH is positively significant. All other control variables are insignificant. To control for the issue of multicollinearity between biographical variables and age dummies, model 2 drops OLD_GENERATION and MIDDLE GENERATION. Model 3 reproduces model 1 but replaces the latter by LN_AGE. The performance of the other exogenous variables remains unchanged in both models.

Looking at the marginal effects, PARENTS ALIVE has the largest marginal effect of -11 percentage points, immediately followed by EXPECT_INH with almost +11 percentage points. GAVE_CARE_PERS and PARENTS_DISTANCE_30MINPLUS reduce the probability of supporting the restriction by 10 and 9 percentage points respectively.

5.4 Empirical results: Multinomial probit regressions

In Section 5.1, we argued that the way the question is presented suggests that questions 1 and 2 might be decided simultaneously. In this case, the multinomial probit model is the adequate empirical model. (see Table 3). We analyze the data with this model, taking option 2 (tax exemption for all care-giving heirs) as a reference category.

[Table 3 about here]

The performance of all variables is qualitatively identical to their performance in two separate Probit models. The inclination to choose option (1) – i.e. vote against a tax exemption altogether

– is driven by the variables TAX_OVEREST (-), IND_RECIPROCITY (-), PARENTS_ALIVE (-), GAVE_CARE_PERS (-), HIGH_EDU (+). The inclination to choose option (3) – i.e. vote for a restricted tax exemption for relatives only – is driven by variables EXPECT_INH (+), GAVE_CARE_PERS (-), PARENTS_DISTANCE_30MINPLUS (-), PARENTS_ALIVE (-).

6. Discussion

In the section above, we use data from the GESIS survey to learn more about citizens' policy preferences for a tax exemption for care-giving heirs in the German inheritance tax. Some 80 percent of respondents support the exemption. Our results indicate that support for the tax exemption is in parts driven by monetary self-interest: Subjects whose parents are alive are more likely to support the tax exemption. At the same time, other variables associated with self-interest – in particular FEMALE, NO_CHILDREN, NOT_MARRIED are not found to be significant. Subjects who gave LTC personally are more supportive of the tax exemption. This may point at self-interest. Alternatively, this result may indicate that these subjects want to see it gratified by society. Somewhat surprisingly, we find no support for the notion that a high valuation of the family increases support for the tax exemption. In line with the previous literature, we find that the perception of the effective tax burden matters: Subjects who overestimate the tax burden for moderate wealth transfers are more likely to support the tax exemption. In addition, subjects are more likely to support this tax exemption if they adhere to the social norm of indirect reciprocity. This result is in line with Bischoff and Kusa (2015) who find that the general acceptance of wealth transfer taxation is lower among subjects who adhere to this norm.

In a second step, we focused on those subjects who supported the tax exemption, and analyze their preferences regarding the second question: Should the tax exemption be restricted to relatives? Again, GAVE_CARE_PERS and PARENTS_ALIVE are found to be significant. Subjects who gave LTC personally and subjects whose parents are alive are less likely to support the restriction to relatives. These results indicate that subjects regard non-relatives taking over

part of the LTC as a relief that can help them to bear the burden of LTC rather than as competitors that weaken their bargaining power vis-à-vis their parents. Surprisingly, we again find no support for the notion that a high valuation of the family leads subjects to prefer the tax exemption restricted to relatives. This result suggests that external help in home care provision is not regarded as weakening the family.

Judged by the marginal effect, expecting an inheritance in the near future has a strong effect on the probability to support the restrictive tax exemption. It is difficult to rationalize why expecting an inheritance has no effect on support for the tax exemption in general but a strong effect on restricting the tax exemption.

The results presented above are based on a large number of observations from a representative survey in Germany. Changing from separate binary regressions for each of the two questions to a unified regression using a multinomial approach does not change the result. Thus, they must be regarded as robust. Nevertheless, some limitations remain. Most importantly, we lack information on the number of respondents' siblings. This is important especially for the middle generation facing the possibility of having parents in need of LTC and at the same time expecting wealth transfers in the next decades. On the one hand, having siblings mean that subjects can share the burden of providing LTC. On the other hand, the division of parents' wealth is reported to be one of the primary reasons for severe disputes among siblings (Titus et al., 1979).

7. Conclusion

The industrialized world is facing an unprecedented increase in wealth transfers together with a massive increase in the share of elderly people who require LTC and a massive increase in the average duration of receiving LTC services. At the same time, the public sector is under increased fiscal pressure and the distribution of wealth is becoming increasingly unequal.

Wealth transfer taxation seems a straightforward possibility to mitigate the latter two developments. However, it causes a tax wedge in intergenerational exchange between wealth and LTC, which reduces the share of home care arrangements. One way to escape this dilemma is to introduce a tax exemption for caregiving recipients of wealth transfers. This paper analyses the support for this tax exemption using data from a representative survey among German citizens in 2014 and 2015. Some 80 percent of the participants support the tax exemption. Among them, 45 percent want to see the tax exemption restricted to relatives. We analyze the factors that make subjects 1) support the tax exemption and 2) support its restriction to relatives.

We expected that subjects who have a high valuation of the family support the tax exemption but want to see it restricted to relatives. However, we find no evidence that citizens policy preferences are driven by their valuation of the family. Similarly, we find no support for the notion that women differ in their policy preferences from men. This result is surprising because women provide the largest part of home care services and are much more likely to require LTC. Thus, they strongly benefit from the tax exemption in its general form.

At the same time, subjects' policy preferences is strongly driven by personal experience in LTC and the fact of having alive parents and thus expecting to be confronted with the situation of the own parents requiring LTC. Having alive parents and personal experience in LTC increases support for the tax exemption but reduces support for restricting it to relatives. The supported generalized tax exemption for caregiving heirs opens the possibility to pay non-relatives for home care services without having to incur a high tax wedge. In our view, these results clearly indicate that LTC is predominantly seen as a burden for those who provide home care to relatives. Non-relatives providing home care are not seen as competitors but as valuable support for caregiving relatives. This result is important beyond the narrow question of how to design wealth transfer taxes. It supports the bottom line of the social science research on LTC and its

impact on family relations: Many citizens feel themselves overburdened with organization of homecare within the family and would like to see more support from outside.

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APPENDIX A: Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
tax_exempt_yes	.7988031	.400952	0	1
restrict_family	.3619265	.4806262	0	1
parents_alive	.7345455	.4416323	0	1
parents_distance_30minplus	.2490909	.4325427	0	1
female	.5070404	.4999833	0	1
no_children	.2900619	.4538518	0	1
not_married	.4492811	.4974538	0	1
gave_care_pers	.2849162	.4514346	0	1
care_in_family	.4061506	.4911784	0	1
parents_same_house	.1309091	.3373447	0	1
family_most_import	.3618621	.4805709	0	1
old_fear_dependence	.8248753	.3801295	0	1
ind_reciprocity	.2251527	.4177408	0	1
tax_overest	.5667015	.4956173	0	1
Ricardo	.3131472	.4638464	0	1
old_generation	.2117384	.4085673	0	1
middle_generation	.4271615	.4946986	0	1
ln_age	3.758084	.361875	2.944439	4.26268
expect_inh	.1186395	.3234072	0	1
high_edu	.3769475	.4846536	0	1
hh_income	7.327626	.4968071	5.991465	8.411833
gov_trust	.1220874	.3274264	0	1

Figures, Tables etc.

Figure 1: Types of LTC arrangements

	Description	Characteristics			
		Place	Qualification	Contract	Direct Remuneration
A	LTC in nursing home	Nursing home	professional	Formal	Yes
B	Nursing services providing LTC in patient's home	Home	professional	Formal	Yes
C	(illegal) migrants providing LTC in patient's home	Home	Mostly non-professional	Informal	Yes (partly)
D	Non-relatives providing LTC in patient's home	Home	Mostly non-professional	Mostly informal	Yes (partly)
E	Relatives providing LTC in patient's home	Home	Mostly non-professional	Mostly informal	No (partly)

Box 1: Question generating the endogenous variable

At present, a reform of the inheritance tax is discussed frequently. Some people demand an appreciation of home care by a tax exemption. Others are against this proposition What do you think? Should there be an inheritance tax exemption for heirs who provided long-term care to the deceased person?

- No (1)
- Yes, for all caregiving heirs (2)
- Yes, but only for caregiving relatives (3)
- Don't know

Table 1: Basic regression model TAX_EXEMPT_YES

VARIABLES	(1)		(2)		(3)	
	Coeff.	ME	Coeff.	ME	Coeff.	ME
parents_alive	0.264** (0.115)	0.076** (0.034)	0.258*** (0.0975)	0.074** (0.029)	0.236** (0.109)	0.068** (0.032)
parents_distance_30minplus	-0.0216 (0.105)	-0.006 (0.029)	-0.0210 (0.104)	-0.006 (0.029)	-0.0193 (0.105)	-0.005 (0.029)
female	-0.00896 (0.0787)	-0.002 (0.022)	-0.00902 (0.0783)	-0.002 (0.022)	-0.0138 (0.0786)	-0.004 (0.022)
no_children	-0.0932 (0.100)	-0.026 (0.029)	-0.0936 (0.0978)	-0.026 (0.028)	-0.102 (0.101)	-0.029 (0.029)
not_married	0.0196 (0.0912)	0.005 (0.025)	0.0186 (0.0902)	0.005 (0.025)	0.0113 (0.0917)	0.003 (0.025)
gave_care_pers	0.182** (0.0903)	0.049** (0.024)	0.182** (0.0897)	0.049** (0.023)	0.181** (0.0902)	0.048** (0.024)
care_in_family	0.0296 (0.0794)	0.008 (0.022)	0.0297 (0.0792)	0.008 (0.022)	0.0263 (0.0794)	0.007 (0.022)
parents_same_house	-0.000940 (0.140)	-0.0003 (0.039)	-0.000778 (0.140)	-0.0002 (0.039)	-0.00477 (0.140)	-0.001 (0.039)
family_most_import	-0.132* (0.0777)	-0.037* (0.022)	-0.132* (0.0777)	-0.037* (0.022)	-0.127 (0.0779)	-0.035 (0.022)
old_fear_dependence	0.00610 (0.0975)	0.002 (0.027)	0.00602 (0.0972)	0.002 (0.027)	0.00916 (0.0973)	0.003 (0.027)
ind_reciprocity	0.239** (0.0972)	0.063*** (0.024)	0.239** (0.0971)	0.063*** (0.024)	0.248** (0.0975)	0.065*** (0.024)
tax_overest	0.306*** (0.0799)	0.086*** (0.022)	0.306*** (0.0797)	0.085*** (0.022)	0.300*** (0.0802)	0.084*** (0.022)
ricardo	0.142 (0.0867)	0.038* (0.023)	0.142 (0.0866)	0.038* (0.023)	0.147* (0.0870)	0.040* (0.023)
old_generation	0.00970 (0.138)	0.003 (0.038)				
middle_generation	5.12e-05 (0.106)	0.00001 (0.029)				
ln_age					-0.0562 (0.172)	-0.015 (0.047)
expect_inh	0.0548 (0.117)	0.015 (0.031)	0.0552 (0.116)	0.015 (0.031)	0.0597 (0.117)	0.016 (0.031)
high_edu	-0.271*** (0.0843)	-0.076*** (0.024)	-0.272*** (0.0822)	-0.076*** (0.023)	-0.282*** (0.0844)	-0.079*** (0.024)
hh_income	-0.0779 (0.0924)	-0.021 (0.025)	-0.0782 (0.0921)	-0.022 (0.025)	-0.0747 (0.0922)	-0.021 (0.025)
gov_trust	-0.0690 (0.109)	-0.019 (0.031)	-0.0691 (0.109)	-0.019 (0.031)	-0.0710 (0.109)	-0.020 (0.031)
Constant	1.105 (0.716)		1.115 (0.707)		1.332 (0.983)	
Observations	1455		1455		1454	

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 2: Basic regression model RESTRICT_FAMILY

VARIABLES	(1)		(2)		(3)	
	Coeff.	ME	Coeff.	ME	Coeff.	ME
parents_alive	-0.285** (0.112)	-0.111** (0.043)	-0.257*** (0.0945)	-0.100*** (0.037)	-0.263** (0.105)	-0.102** (0.041)
parents_distance_30minplus	-0.238** (0.0978)	-0.092** (0.037)	-0.238** (0.0977)	-0.092** (0.037)	-0.238** (0.0977)	-0.092** (0.037)
female	-0.138* (0.0743)	-0.053* (0.029)	-0.136* (0.0742)	-0.053* (0.029)	-0.137* (0.0744)	-0.053* (0.029)
no_children	-0.0710 (0.0979)	-0.027 (0.038)	-0.0603 (0.0945)	-0.023 (0.037)	-0.0651 (0.101)	-0.025 (0.039)
not_married	-0.0226 (0.0854)	-0.009 (0.033)	-0.0178 (0.0849)	-0.007 (0.033)	-0.0194 (0.0856)	-0.008 (0.033)
gave_care_pers	-0.267*** (0.0856)	-0.103*** (0.032)	-0.272*** (0.0850)	-0.104*** (0.032)	-0.270*** (0.0855)	-0.104*** (0.032)
care_in_family	0.0244 (0.0763)	0.009 (0.029)	0.0256 (0.0760)	0.010 (0.029)	0.0250 (0.0762)	0.010 (0.029)
parents_same_house	0.193 (0.125)	0.075 (0.048)	0.197 (0.125)	0.076 (0.048)	0.194 (0.126)	0.075 (0.049)
family_most_import	-0.0170 (0.0749)	-0.007 (0.029)	-0.0178 (0.0748)	-0.007 (0.029)	-0.0173 (0.0749)	-0.007 (0.029)
ind_reciprocity	-0.0620 (0.0864)	-0.024 (0.033)	-0.0597 (0.0861)	-0.023 (0.033)	-0.0603 (0.0862)	-0.023 (0.033)
tax_overest	-0.0559 (0.0764)	-0.022 (0.030)	-0.0508 (0.0758)	-0.020 (0.029)	-0.0523 (0.0765)	-0.020 (0.030)
ricardo	-0.00839 (0.0786)	-0.003 (0.030)	-0.00810 (0.0785)	-0.003 (0.030)	-0.00846 (0.0786)	-0.003 (0.030)
middle_generation	-0.0331 (0.0988)	-0.013 (0.038)				
old_generation	-0.0688 (0.133)	-0.027 (0.051)				
ln_age					-0.0227 (0.161)	-0.009 (0.062)
expect_inh	0.276** (0.111)	0.107** (0.043)	0.272** (0.110)	0.106** (0.042)	0.273** (0.111)	0.106** (0.043)
high_edu	-0.0269 (0.0802)	-0.010 (0.031)	-0.0200 (0.0786)	-0.008 (0.030)	-0.0222 (0.0802)	-0.009 (0.031)
hh_income	0.0374 (0.0852)	0.014 (0.033)	0.0360 (0.0849)	0.014 (0.033)	0.0371 (0.0853)	0.014 (0.033)
Constant	0.105 (0.657)		0.0511 (0.648)		0.139 (0.899)	
Observations	1240		1240		1240	

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

Table 3. Multinomial probit model

VARIABLES	(1)	(3)	(4)	(6)	(7)	(9)
	0	2	0	2	0	2
parents_alive	-0.507*** (0.166)	-0.336** (0.150)	-0.492*** (0.141)	-0.323** (0.127)	-0.465*** (0.157)	-0.322** (0.142)
parents_distance_30minplus	-0.112 (0.148)	-0.315** (0.135)	-0.114 (0.148)	-0.317** (0.135)	-0.116 (0.148)	-0.317** (0.135)
female	-0.0433 (0.113)	-0.104 (0.102)	-0.0432 (0.112)	-0.104 (0.102)	-0.0371 (0.113)	-0.104 (0.102)
no_children	0.101 (0.144)	-0.0404 (0.133)	0.101 (0.141)	-0.0421 (0.129)	0.111 (0.146)	-0.0413 (0.135)
not_married	-0.0442 (0.131)	-0.0402 (0.117)	-0.0416 (0.129)	-0.0384 (0.116)	-0.0325 (0.132)	-0.0382 (0.118)
gave_care_pers	-0.384*** (0.129)	-0.315*** (0.116)	-0.384*** (0.128)	-0.315*** (0.115)	-0.382*** (0.129)	-0.315*** (0.116)
care_in_family	-0.0224 (0.114)	0.0324 (0.103)	-0.0233 (0.114)	0.0312 (0.103)	-0.0192 (0.114)	0.0312 (0.103)
parents_same_house	0.146 (0.200)	0.284 (0.174)	0.146 (0.200)	0.283 (0.174)	0.150 (0.201)	0.283 (0.175)
family_most_import	0.154 (0.112)	-0.0342 (0.102)	0.154 (0.112)	-0.0342 (0.102)	0.148 (0.112)	-0.0338 (0.102)
old_fear_dependence	-0.148 (0.142)	-0.267** (0.129)	-0.148 (0.142)	-0.266** (0.128)	-0.151 (0.142)	-0.266** (0.128)
ind_reciprocity	-0.344** (0.137)	-0.0699 (0.120)	-0.344** (0.137)	-0.0705 (0.119)	-0.355** (0.138)	-0.0697 (0.120)
tax_overest	-0.422*** (0.115)	-0.0722 (0.104)	-0.420*** (0.114)	-0.0712 (0.103)	-0.413*** (0.115)	-0.0714 (0.104)
ricardo	-0.170 (0.123)	0.0217 (0.109)	-0.170 (0.123)	0.0210 (0.109)	-0.177 (0.124)	0.0214 (0.109)
old_generation	-0.0237 (0.199)	-0.0161 (0.180)				
middle_generation	0.00621 (0.151)	0.0130 (0.137)				
ln_age					0.0684 (0.246)	0.00413 (0.222)
expect_inh	0.147 (0.170)	0.426*** (0.150)	0.146 (0.169)	0.426*** (0.149)	0.140 (0.170)	0.425*** (0.150)
high_edu	0.340*** (0.121)	-0.0218 (0.110)	0.341*** (0.118)	-0.0220 (0.107)	0.354*** (0.121)	-0.0217 (0.110)
hh_income	0.0997 (0.132)	-0.00199 (0.118)	0.101 (0.132)	-0.000379 (0.118)	0.0968 (0.132)	-0.000436 (0.118)
gov_trust	0.206 (0.158)	0.238 (0.145)	0.207 (0.158)	0.239* (0.145)	0.210 (0.158)	0.239* (0.145)
Constant	-0.592 (1.027)	0.541 (0.917)	-0.620 (1.012)	0.521 (0.904)	-0.884 (1.406)	0.504 (1.263)
Observations	1455	1455	1455	1455	1454	1454

Coefficient estimators with standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1