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Citizens' preferences for intrafamilial wealth distribution and inheritance taxation

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List of Abbreviations

EU	European Union
IGT	Intergenerational transfers
ITT	Intra-familial time transfers
ME	Marginal effect
LTC	Long-term care
USA	United States of America

1 Introduction

The industrialized world currently experiences substantial changes in the structure of intergenerational transfers (hereafter: IGT). Decreasing mortality and fertility rates result in declining number of children but increasing number of surviving generations (e.g., PFAW, 2001). At the same time, we[1] observe an increasing number of people needing long-term care (hereafter: LTC). Moreover, dependent elderly people strongly prefer to be cared in their private homes (e.g., Eurobarometer, 2007). To accommodate these preferences but also for financial reasons, substantial amount of care is provided by family members, fully or in part (e.g., Triantafillou et al., 2010). Providing home care comes at considerable opportunity costs occurring due to income losses, especially since we observe an increase in female labor market participation.

Next to LTC, the second intra-familial transfer is childcare. Here, grandparents provide assistance and grandparental childcare remains the most popular alternative to formal childcare (e.g., Hank and Buber, 2009). With increasing life expectancy, we observe a growing number of physically and mentally fit grandparents, who are able to provide childcare and enable labour market participation of their children. (e.g., Bengtson and Lowenstein, 2003). In sum, we see that intra-familial time transfers (hereafter: ITT), i.e. practical help like babysitting or home care, have not lost their relevance in modern society: they are still quantitatively meaningful in both directions, even in modern society with more and more active role of government.

Third dimension of IGT unlike previous ones is not time but wealth: We currently observe an unprecedented accumulation of private wealth. Every year, portions of this wealth are passed on from one generation to the next. In Germany downward wealth transfers are estimated to amount

[1] Three chapters of this thesis are written in co-authorship, the remainder - in single-authorship. To avoid breaks in style while using different personal pronouns, the plural will used throughout this thesis.

to € 4.6 billion in the current decade (see Sieweck, 2011). This accumulation opens the possibility to pay for ITT.

These empirical phenomena entail governmental and societal challenges such as growing fiscal pressure arising from aging populations and increasing demand in formal LTC facilities. In 2050, LTC spending in Germany is expected to achieve 3% of GDP and is forecast to grow faster than national income (e.g., OECD, 2011). Moreover, the unprecedented wealth concentration causes a considerable increase in wealth inequality. Wealth transfer taxation is one of the potential instruments to reduce the inequality in the distribution of wealth (e.g., Bossmann et al., 2007). Increasing the tax rate or making the tax code more progressive can reduce wealth inequality and at the same time, additional tax revenues can release the fiscal pressure arising, among other things, from aging populations. The LTC-related expenditures can be also reduced through the legislative support of family care assistants, i.e. non-relatives providing homecare services in the own private home of the care recipient, since dependent elderly people are preferred to be cared at home and their family members are overburdened with LTC provision (e.g., Eurobarometer, 2007). These two instruments – wealth transfer taxation and support of the family care assistants - are addressed in our thesis.

Economic literature concentrates on models of family, motives of transfers and IGT related policies (e.g., Bernheim et al., 1985; Coall and Hertwig, 2010). Social sciences supply us with studies on the social norms and empirical research on transfers within the family. For instance, they focus on widespread social norms of family responsibilities, such as filial responsibility and parental responsibility (e.g., Herlofson et al., 2011; Daatland, 2011). While the models of family and motives underlying IGT have received broad attention, we focus on much less studied topic - on citizens' view on intra-familial IGT and wealth transfer taxation - that has the potential to link economics and social sciences. In this thesis, we establish this link by bringing citizens' view

into economics. We begin with citizens' preferences for the wealth transfer taxation, first fundamentally and then in the framework of LTC provision.

In the last chapter of the thesis, we take one step back and address the question that arises once we see the unbowed intensity of ITT and the vast of accumulated wealth: Should ITT be paid for? Again, here we capture the citizens' view and explore the acceptance of equity principle within the family. The main insights and principles have been derived from several fields of research, such as family economics, economic psychology, public choice and justice research.

This thesis addresses three topics and its empirical analysis is based on a representative survey among the German population. It was conducted by GESIS in 2014 and 2015 and included two blocks of questions on intergenerational relations, LTC, and inheritance taxation that we submitted. First, we focus on the general acceptance of inheritance taxation and ask subjects whether they agree that inheritances beyond a certain amount should generally be taxed. Almost 60 percent oppose inheritance taxation. This seems to be puzzling if we realize that the bulk of tax revenues stems from a small percentage of very high transfers. In Germany, around 90 percent of German inheritances are free of tax (e.g. Statistisches Bundesamt, 2013). In other words, the median voter can be certain not to pay taxes on wealth transfers but to benefit from the extra budgetary means. Nevertheless, the acceptance even for a very moderate taxation of wealth transfers is low, also in other countries (e.g., Rowlingson and McKay, 2005; Hammar et al., 2008; Prabhakar, 2012). We find monetary self-interest and redistributive preferences to drive citizens' attitude in this matter. Subjects who overestimate the effective tax burden are more likely to oppose inheritance taxation. Being at the heart of intra-familial exchange relations, women are more likely to oppose wealth transfer taxation than men are. We accounted for subjects' view on the relevance of the exchange motive by constructing a vignette that captures the degree to which subjects view bequests as part of an exchange relationship. We do not find an evidence that

subjects who regard bequests to be the last transfer in a system of exchange between generations are more likely to oppose inheritance taxation.

The second topic of this thesis emphasizes the public acceptance of policies that pave the way for a more active role of family care assistants in the context of wealth transfer taxation. We analyze survey data on the proposal to introduce a tax relief for caregiving heirs to the German inheritance tax in Chapters 5 and 6. The proposed tax relief does not correspond to existing reform proposal but acts as a theoretical instrument that allow indirect remuneration for time transfers. The analysis on this second topic proceeds in two steps with first step being a background analysis for the second one. In a first step (presented in Chapter 5), we analyze the proposal to introduce a tax relief for caregiving heirs to the German inheritance tax: Self-interest is found to drive subjects' policy preferences. In line with the previous literature, we find that the perception of the effective tax burden matters. While women are at the heart of intergenerational exchange relations, their support for the tax relief is not found to be higher than for men. Subjects are more likely to support the tax relief if they adhere to the social norm of indirect reciprocity. In a second step (presented in Chapter 6), we provide empirical evidence on the factors that drive the support for a more active role of family care assistants. We find support to be higher among subjects who gave LTC personally. Monetary self-interest is found to matter. In addition, we find evidence of a clear line of conflict: Citizens with alive parents are more likely to support a more active role of family care assistants than citizens whose parents are dead.

In the fourth and final chapter, we take one step back and address a more fundamental question: we focus on citizens' view regarding the question whether equity principle should be applied within the family, in particular should ITT between generations be compensated or not. Here we consider compensation for two ITT - LTC and grandparental childcare – firstly, in isolation and then in comparison within subjects. Our key results can be summarized as follows: First, we find that age has the strongest effect on the acceptance of the equity principle for both informal LTC

and grandparental childcare. Second, family valuation does not matter in any of the dimensions. Third, it is puzzling for us that being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of ITT. Looking closer, however, we find it to have a moderating effect on other important variables. In particular, including the interactions shows that women having children differ in their social acceptance from other subjects: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation.

The general outline of this thesis is as follows: We start with a review of literature in chapter 2 to cover the relevant strands of literature and to show how our contributions fit into the existing body of research. Chapter 3 introduces the extensive preparatory studies in which we developed the questions used in the representative survey. The subsequent chapters comprise studies, starting with the contribution on citizens' view on inheritance taxation presented in Chapter 4. Chapter 5 addresses the determinants of citizens' preferences for a tax relief for caregiving heirs, relatives as well as non-relatives. Chapter 6 deepens the insights from the Chapter 5 and investigates the public acceptance of policies that pave the way for a more active role of non-relatives providing homecare services in the own private home of the care recipient.[2] Chapter 7 addresses an issue of applying the equity principle within the family. Chapter 8 provides a concluding summary and points to perspectives for future research.

2 Review of Literature

In the following chapter, we introduce the reader to the relevant background concepts in the related economic fields of research. Moreover, some concepts from sociological studies will be briefly presented. This literature review reveals how the contributions of the studies fit in to the

[2] Chapter 3, 4 and 5 are coauthored with Prof. Dr. Ivo Bischoff, University of Kassel.

existing body of literature. First, we begin with a general introduction to the IGT, their types and empirical relevance. We proceed with review of the literature on transfer motives, economic as well as sociological. Finally, a literature on taxation of wealth transfers, the institutional framework in Germany and empirical studies on policy preferences for wealth transfer taxes are briefly presented.

2.1 Intergenerational Transfers within Families: Types of Intergenerational Transfers and their Empirical Relevance

Following the standard literature in family economics, we define family as a social group typically consisting of three or more generations. Family members maintain regular contact; they variously support each other within and across generations (e.g., Moore, 2001). This concept of the family comprises a wider group compared to the nuclear family that consists of a mother, a father and children (e.g., Corbett, 2004). Family members transfer resources between generations over the life cycle.

We define IGT as flows of resources between individuals of different generations (e.g., Johnson et al., 1989). In this thesis, we focus on transfers of scarce resources, in particular, on financial and time transfers.[3] We can distinguish between two types of transfer flows by direction, namely upward and downward transfers. Downward transfer flow implies transferring from older to younger generation, upward transfer flow from younger to older generation (e.g., Arrondel and Masson, 2006).

In the modern society, we observe different mechanisms of transfer flows, namely collective and individual IGTs. Collective IGTs comprise collective pension plans with intergenerational risk sharing and other state programs that guarantee financial security and well-being of the population (e.g., Johnson et al., 1989). In this thesis, we leave this level aside and concentrate on individual

[3] Sociologists have a very broad definition of time transfers and argue that emotions and knowledge transfers (learning process within the family) can be defined as IGT as well (e.g., Jessel, 2009). We restrict our categorization to the transfers of scarce resources (time and money) that can be expressed in monetary units.

IGTs that take place within the family. We define individual IGT as flows of resources between generations within a family. Here are the main categories of transfers, by type of what is transferred, that are discussed in the literature:

- Financial transfers (e.g., inter vivos transfers, bequests),
- Time transfers, typically in the form of provision of services (e.g., LTC, babysitting, household help),
- Co-residence, also known as shared living arrangements.

2.1.1 Financial Transfers

Financial transfers cover a wide range of transactions comprising income and wealth transfers to another generation. In the industrialized world, we observe a downward flow of financial transfers, also known as a 'cascade model' (e.g., Hoff, 2007). Old generation act as a donor of financial transfers and younger generation is a beneficiary. According to Kohli (1999) in Germany, some 40% of parents (-in-law) make financial transfers to their children, but less than 12% of children (-in-law) provide financial transfers to their parents. Laferrere and Wolff (2006) argue that the current level of retirement provides the old generation with high income in addition to the accumulated wealth. Therefore, parents usually do not need additional financial transfers from their children. Survey data also confirms the dominance of upward time transfers compared to financial transfers (e.g.; Kohli, 1999)

Analyzing financial transfers, Arrondel and Masson (2006) distinguish between investment in education, financial assistance and wealth transfers. Middle-aged parents mainly provide investment in education, also known as human capital investment, to their young children (e.g., Laferrere and Wolff, 2006). Financial assistance comprises parental help to the liquidity-constrained adult children, especially for the purchase of their own real property. Financial assistance, such as cash transfers, is often provided on a regular basis (e.g., Arrondel and Masson, 2006).

Wealth transfers comprise inter vivos transfers, i.e. transfers that occur during the lifetime of the donor, and bequests, i.e. after-death transfers. The main differences between wealth transfers and financial assistance are the regularity of transfers and their implicit purpose. Financial assistance adds to the children's consumption, wealth transfers - to the children's wealth (e.g., Arrondel and Masson, 2006).

In this thesis, we are primarily interested in wealth transfers, in particular in bequests. Economic literature distinguishes between accidental and intended bequests. Accidental bequests occur when the donors saved too much than they turn out to need (e.g., Cremer and Pesteau, 2006). It is widely accepted that most IGT are non-accidental (e.g., Hendricks, 2002).

2.1.2 Time Transfers

Time transfers cover a wide range of instrumental transactions, such as household help, LTC and childcare assistance. The reader should be aware that researchers define time transfers in a different way: Some researchers argue that attention such as coming for a coffee should be counted as time transfer as well (e.g., Bernheim et al., 1985). We follow the argumentation of Arrondel and Masson (2006) that visits and telephone calls are time consuming but should not be categorized as time transfers: they restrict the definition of time transfers to the practical help like dressing, showering, shopping, transportation, paperwork, babysitting, etc. Contrary to the financial transfer flow, we observe a net upward flow of time transfers between generations: children supply their parents with services such as intra-familial LTC and household help when the parents get older (e.g., Kohli and Künemund 2000; Litwin et al., 2008). Grandparents taking care of grandchildren do not outweigh these upward time transfers.

This thesis mainly focus on a LTC as the most relevant upward time transfer. We follow McCall (2001) and define LTC as services designed to support the needs of elderly people who are not able to perform everyday activities. There are various providers of LTC such as nursing homes,

professional care agencies and non-professional caregivers. For Germany, the Federal Statistical Office counted 2.25 million citizens officially registered to require LTC in 2007 (e.g., Husmann, 2010). Roughly, one third of the care recipients resides in a nursing home and receive LTC from professional care workers. The other two thirds receive LTC services in the privacy of their own home. Three categories of home care can be distinguished. The first category comprises all citizens who receive LTC from professional care workers at home (approx. 500000 in 2007). The majority of citizens receives home care without noteworthy support from professional care workers (approx. 1 million in 2007). For them, home care services are provided by non-professional caregivers.

We follow Kluzer et al. (2010) and distinguish between two types of non-professional caregivers: carers and family care assistants. Carers are family members who provide LTC and do not receive any monetary compensation on a regular basis but only occasional cash benefits or allowances.[4] Carers often reduce their working hours when they start to provide home care. About 15 percent of them stop working entirely (e.g., Schmidt and Schneekloth, 2011). Thus, they incur income losses during the time they provide home care to a family member. Family care assistants are non-relatives who do not work for nursing services but exclusively for the care recipients. In many cases, they work without wage contract and/or without social insurance. The category of family care assistants comprises illegal migrants from low-income countries as well as legal German residents who do not declare their salary. The empirical relevance of the latter category is difficult to assess because the arrangements are mostly based on informal contracts. Pedelabat (2012) estimates that approximately 100.000 female migrants work fulltime in providing LTC to German citizens in 2010.

The economic value of the unpaid non-professional caregiving is difficult to estimate because of its unofficial nature. Using the US Data from various surveys, Arno et al. (1999) estimated it at

[4] Note that in some cases friends, neighbors and volunteers can be carers as well. However, there are typically family members who provide unpaid LTC on a regular basis.

the value of $196 billion. To get the feeling of this amount, it is double the amount spent on nursing homes and more than six times the amount spent on professional home care during the same period (see McCall (2001) for further statistics).

Next to LTC, childcare is the second important ITT. Grandparental childcare is an informal childcare assistance within the family. It remains the most popular alternative to formal childcare even in the modern society (e.g., Arrondel and Masson, 2001; Hank and Buber, 2009). With increasing life expectancy, we observe a growing number of physically and mentally fit grandparents, who are able to provide childcare and enable labour market participation of their children. (e.g., Bengtson and Lowenstein, 2003). Moreover, longer and healthier life also has the effect of increasing the length of time spent as a grandparent, often to around a third of the lifespan (e.g., Dench and Ogg, 2002).

2.1.3 Co-residence

Co-residence can be defined as sharing living arrangements as of an adult child with a parent (e.g, Black and Nitz, 1996). It is still common in the modern European society; however, its occurrence differs strongly with respect to the country. In Northern European countries, co-residence takes place relatively seldom, e.g. only 5% of citizens in Sweden and 4% in Denmark share their living arrangements. In southern Europe, by contrast, around 30% of families are still living together. Germany is in-between with its rates: 10% live in the same household and 18% in the near co-residence[5] (e.g., Isengard and Szydlik, 2012). Co-residence can be interpreted as a mix of time and financial transfers. Observing the IGT is more challenging within the household than between the households. It goes along with all kinds of services flowing in both directions. The benefits could be, for example, sharing of expenses, safety or lower costs by organization of ITT. At the same time, negative aspects such as loss of independence and frequent conflicts can be observed (e.g., Albuquerque, 2014). One of the important aspects of the co-residence is a strong preference

[5] Near co-residence means that two generations live in one house but in separate apartments.

of dependent elderly people to be cared at home and related opportunity costs of the caregiving relatives. Here it is the matter of comparison of home care and institutional care (e.g., Guo et al. 2015). Moreover, co-residence plays an important role when adult children temporary come back to their parents' home, for instance, in case of divorce (e.g., Laferrere and Wolff, 2006).

2.2 Transfer Motives

This chapter provides an overview of motives of IGT – be it wealth or time transfer. The knowledge about motives is necessary to derive predictions of human behavior on the individual level (e.g., Kohli and Künemund, 2003). Understanding when and what kind of transfers can be expected at the individual level helps to organize an appropriate system of public transfers (e.g., Mikulincer and Shaver, 2007). Moreover, different transfer motives result in different reactions to public transfers and may predestinate the support of reform proposals.

There are two main models discussed in the economic literature. Some scholars argue that intra-familial transfers are motivated by exchange motive (also known as direct reciprocity). According to the exchange model, financial transfers from parents to children are given in exchange for transfers parents themselves received from their children (e.g., Lopez-Anuarbe, 2013). In this case, bequests act as a "final payment" for the offspring' services in a reciprocal relationship between generations. The exchange relationship is sometimes formalized in a contract between parents and children like in the "Altenteil"-arrangements (Germany) or "Ausgedinge"-arrangements (Austria) made in the agricultural sector (e.g., Gjerde 1997; Wagener, 2002). In many cases, however, a formal contract does not exist. Nevertheless, an implicit exchange contract may be in place.

Another group of scholars argues that transfers from the older to the younger generation are motivated by the wish to support their offspring (e.g., Barro, 1974; Coall and Hertwig, 2010). According to the altruistic model, parents tend to equalize incomes of their children through transferring unequal amounts, i.e. children with lower income are supplied with larger transfers.

The amount transferred and its division among the children do not depend on whether the latter provided any transfers in exchange. According to Laferrere and Wolff (2006), parents take care of dependent small children and helping the adult children partly stem from this habit.

A number of studies shows that both exchange and altruistic motive are empirically relevant. In their study on IGT 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 LTC (see also Angelini, 2007). Using the US Survey data, Wang (2010) find that children provide more time transfers when expecting to receive inter vivos transfers, this effect does not hold for bequests. Tomes (1981) tests the altruistic model with regressing bequests on beneficiary's income and donor's income. He finds an evidence that supports of the altruistic model: children with higher labor earnings receive smaller bequests and wealthier parents make larger bequests.

The timing of parental wealth transfers is closely related to the transfer motive. Altruistically motivated parents transfer their wealth when their children are in a needy position (e.g., Laferrere and Wolff, 2006), therefore inter vivos transfers are expected to be preferred over bequests. Leopold and Schneider (2011) make a longitudinal comparison of inter vivos transfers and bequests in Germany and find out that giving inter vivos transfer is deliberate action that is driven primarily by economic needs of the beneficiaries. The relevance of altruistic motivation in case of inter vivos transfers is also supported by other studies (e.g., Fingerman et al., 2009). Norton and Van Houtven (2006) find out that inter vivos transfers are provided in exchange for LTC. Hence, empirical studies provided evidence on an unequal distribution of inter vivos transfers but found no consensus on their motive. Considering the optimal timing of parental wealth transfers, the altruistic model does not perform well (e.g., Davies and Shorrocks, 1999).

Sociologists focus on the role of norms in IGT and argue that individuals' behavior may be motivated by a feeling of duty resulting from internalized social norms (e.g., Lindbeck et al.,

1999). If individuals act against these norms, they experience negative feelings such as shame or guilt (e.g., Bischoff and Krauskopf, 2013). Moreover, a feeling of duty may also result from moral convictions (e.g., Kotzebue and Wigger, 2010). Considering IGT, sociological studies support the notion of widespread norms of family responsibilities: filial responsibility and parental responsibility (e.g., Herlofson et al., 2011, Daatland, 2011). According to the norm of filial responsibility, adult children should take care of their elderly parents when the latter are in need for help (e.g., Rossi Del Corso and Lanz, 2013). According to the norm of parental responsibility, parent should help adult children when they are in need. In their study, Herlofson et al. (2011) analyze family responsibility scales in nine European countries. They find that German citizens feel strongly obliged to take responsibility for caring for their dependent elderly parents. However, they feel themselves obliged only to organize LTC and not to adjust their working lives in order to care for their parents personally. Looking at the parental responsibility scale, some 55 percent of the parents state that they are ready to help their adult children financially, but only some 30 percent agree that parents should adjust their working lives in order to help their adult children.

Some researchers argue that family responsibility norms may result from the "demonstration effect" (e.g., Arrondel and Masson, 2001). Individuals have expectations about filial responsibilities and share this view with the next generation. Children provide LTC and attention to their parents because they observed their parents to do the same when the latter were young (e.g., Stark, 1995). The "demonstration effect" can be also applied to downward transfers: parents provide financial and time transfers to their children because they faced the same support when they were young or they want to pass the similar behavior to the next generation. Using the French survey data, Wolff (2001) finds that respondents whose own parents co-resided with them in the past, have a significantly higher probability to move in with their children. Cox and Stark (1996) find similar evidence using U.S. data.

Finally, IGT can be also explained with evolutionary theory (e.g., Hamilton, 1964). This theory considers survival, fertility and reproduction (e.g., Buss, 2009). According to the evolutionary theory, downward parental and grandparental transfers should dominate upward transfers such as LTC, because the downward transfers are crucial for offspring' survival and reproduction. Considering the bequest distribution between siblings, parents driven by evolutionary motives are expected to favor their biological children over stepchildren or adopted ones. Moreover, they should favor children that have (or are more likely to have) children themselves (e.g., Cox, 2003).

2.3 Wealth Transfer Taxation

In this chapter, we review the literature on wealth transfer taxation and on the institutional framework in Germany. In addition, studies on policy preferences for wealth transfer taxation are briefly reviewed. Many European countries tax private wealth transfers (e.g., Büttner et al., 2004; AGN Europe, 2014). There exist two main types of wealth transfer taxes: the inheritance tax (Continental system) and the estate tax (Anglo-Saxon system). Estate taxes are imposed on the net value of the bequest left behind by the bequeather. The estate tax rate is independent of the number of heirs and the degree of kinship between heir and bequeather. Inheritance taxes are levied on the monetary value of transfers received. Tax exemptions and tax rates mainly depend upon the degree of kinship between heir and bequeather (i.e., tax rate is higher for a niece than for a daughter).

These two types of wealth transfer taxes vary in the freedom of bequest allocation. Estate taxation usually gives donors the total freedom to pass the wealth to anyone: unequal sharing among children is more widespread and not legally restricted. The government does not reallocate resources among heirs. Inheritance taxation often comes along with the obligation to pass the donor's wealth to its children implying the mandatory equal sharing for most of the wealth. Therefore, the government is partly responsible for allocation of resources in the family (e.g.,

Cremer and Pesteau, 2006). This reallocation can be alleviated through unequal inter vivos transfers in the family.

Very few countries like the United States of America and the United Kingdom collect the estate tax[6]. In the USA, the tax is collected in a decentralized way: each state decides whether to impose the estate tax. Most countries use inheritance tax in their taxation systems. In most cases, a progressive tax schedule is implemented: the tax rate increases with the total amount of wealth. Only few countries like Croatia, Denmark, Ireland and Portugal report fix tax rates.[7]

In Germany, tax rates and tax exemptions, i.e. monetary exemption, which reduces taxable income, mainly depend on the estate value and 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 € 200000, and parents € 100000. The exemption for other beneficiaries is only € 20000. The inheritance 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. It 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 does 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[8].

While the public generally accepts substantial taxes on income, the acceptance even for a very moderate taxation of bequest and gifts is low. There has always been an active political discussion

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[6] The difference between the inheritance and estate tax is not respected in the language of law of the United Kingdom. The tax is named "inheritance tax" but is imposed on the assets of deceased person.

[7] See Gift and Inheritance Tax Survey 2014 (http://www.agn-europe.org/tax/)

[8] For detailed information on the tax rates see Inheritance and Gifts Law (Erbschaftsteuer- und Schenkungsteuergesetz)

on 'double taxation' (e.g., Birney et al., 2006). The opponents of wealth taxation argue that the wealth of the deceased person has already been taxed with income tax, withholding tax on capital, etc. For this reason, it is unfair to impose the tax one more time. Moreover, Scheffrin (2013) pointed that politicians who oppose inheritance tax frame it as a system threat to the basic institution of the family. In the last decade, many countries all over the world abolished the wealth taxes after political debates (e.g., Austria, Russia, Sweden, Norway, Singapore).[9] Moreover, the last decade has seen a reduction in the effective taxes on bequests and gifts in many western countries (e.g. Conway and Rork, 2004, Berttochi, 2010).The supporters of inheritance tax use the social equity argument: the tax is desirable for redistributive reasons (e.g., Brunner and Pech, 2012). Inheritance is seen as an unearned income that increases economic inequality. Moreover, the tax affects relatively few decedents and the existing tax schedules leave the median voter untaxed.

This thesis builds on the existing studies on citizens' policy preferences for taxation. Recent studies show that self-interest plays an important role in shaping of policy preferences: Subjects who expect to be burdened heavily by a certain tax tend to oppose this tax (e.g., McCaffery and Baron, 2006; Ansolabehere, 2007). Furthermore, Prabhakar (2012) shows that subjects' stage in life influences their attitude to different taxes. He compares the groups of English respondents of different age and found out that older people perceive the inheritance tax as the most unpopular one.[10]

The number of studies that focus explicitly on policy preferences for wealth transfer taxation so far is limited. Moreover, the majority of the studies have been conducted in the USA. Hence, there is a lack of information about the policy preferences of European taxpayers. The studies support the notion that self-interest matters also when it comes to subjects' preferences on wealth

[9] See Gift and Inheritance Tax Surveys for detailed information (http://www.agn-europe.org/tax/)

[10] Young respondents perceive fuel duties as the most unpopular tax.

transfer taxation (e.g., Hammar et al., 2008). In the public debate, there is a widespread opinion that for the wealthiest people there exist many possibilities to avoid 'death taxes'. However, most of the tax literature contradicts this belief with the argument that estate is observable and the tax on it cannot be avoided or evaded. Page et al. (2013) investigated the policy preferences of the wealthy Americans, i.e. of the people that are potential estate tax payers. They ask about the preferred tax rate on estate worth $10 million and on estate worth $100 million. The survey showed significant difference in preferred tax rate on estate worth $100 million of general public (preferred tax rate of 28.2%) and of wealthy Americans (preferred tax rate of 19.2%) that supports a self-interest consideration.

Another important aspect is the misperceptions of the tax rates and tax exemptions. In the recent years, vigorous support for repealing the 'death taxes' has come from people that would never pay the tax and therefore gain nothing from this repeal. Slemrod (2006) shows that subjects generally expect wealth transfer taxes in the USA to burden more citizens than they actually do. He argues that this misperception explains some of the support for eliminating the tax. The acceptance of wealth transfer taxation is higher among those who have a more accurate view on the fraction of citizens actually taxed. Kuziemko et al (2013) find that informing the subjects about the target group of wealth tax doubles the amount of tax supporters. Additionally, the survey shows that informing the respondents significantly increases the share of people who are even ready to sign the petition to the U.S. Senators in order to raise the estate tax rate. In his study, Sides (2015) evaluates expectations on the estate tax and confirms the importance of the information. Moreover, he stresses that political predispositions of the subjects, such as party identification, play an important role in favoring of estate tax.

3 Preparatory Studies

The main analyses in this thesis are based on the representative survey among the German population conducted by the Leibniz Institute for Social Sciences in Mannheim, Germany

(GESIS, 2016). Subjects go through numerous waves of questions on a wide range of different topics taking place on a bi-monthly basis. GESIS invites scientists to submit blocks of questions and selects some of the blocks that successfully passed a review process. We submitted a block of questions focusing especially on the topic of IGT and inheritance taxation. These questions were used in two survey waves in 2014 and 2015.

The questions submitted to GESIS emerged as a result of different preparatory studies. Therein, we took a closer look at the perceptions and beliefs regarding intergenerational relations and wealth transfer taxation. For this purpose, we conducted a number of preliminary studies: focus group interviews and the pre-test with the students of Kassel University. First, we organized focus group interviews with heterogeneous groups. According to Barsch (1987), the focus group interview is a qualitative research method used to obtain data about feelings, beliefs and opinions of small groups of participants on a problem, phenomenon, etc. Bellenger et al. (1976) identified several usages of focus groups, among them we can stress generating hypotheses that can be further tested quantitatively; generating information helpful in structuring of a questionnaire and providing overall background information. This research method has proven to be suitable for investigation of motivations (e.g., Müller, 2012).

The focus group interviews were conducted in February 2014. We invited participants with different socio-economic background and of different age. In order to achieve the high level heterogeneity within the focus groups, we gave an advertisement in our local newspaper Hessische Niedersächsische Allgemeine. Additionally we sent an invitation to the staff of Chamber of Commerce and Industry (Germ: Industrie und Handelskammer), German Federation of Trade Unions (Germ: Deutsche Gewerkschaftsbund) and administration staff of the Kassel University via E-Mail. Please, see Fig. 1 for the invitation (in German).

We made six groups with 7 to 8 participants according to the stratification criteria: sex, age, number of siblings and number of children. We formed groups of different age to meet different

roles, i.e. to combine potential heirs with potential bequeathers. We tried to avoid putting people who know each other into one focus group by separating couples and colleagues from one department.

After a short introduction round and a warm-up phase, we proceeded with the topic family and intra-familial intergenerational relationships. Firstly, the participants discussed concepts that came into their mind when thinking about transfers within the family, in particular, the transfers between parents and their adult children. Each focus group had 10 minutes to discuss the concepts and to write them down on the cards. Afterwards, we put the cards with the concepts on a whiteboard. The next task was to find a relation between the concepts using the arrows "causes/ stimulates" (Germ: bewirkt/ fördert); precludes/ diminishes (Germ: verhindert/ vermindert) and an arrow without a label (the relationship was verbally explained by participants). We obtained a permanent record of verbal communications by using audio recorder. Additionally, notes of nonverbal communication were made. The result was photographed.

Figure 3.1: Invitation to take part in the focus group interview placed on the web page of our department (in German)

UNIKASSEL
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FB Wirtschaftswissenschaften

Fachgebiet Volkswirtschaftslehre, Schwerpunkt Finanzwissenschaft

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www.uni-kassel.de/go/bischoff_vwl

28. Januar, 2014

Sehr geehrte Damen und Herren,

Im Rahmen eines Forschungsprojekts **suchen wir Teilnehmerinnen und Teilnehmer für Gruppendiskussionen**. Im Fokus der Diskussion steht die **Beziehung zwischen den verschiedenen Generationen innerhalb der Familie.**

Gewünschtes Alter: 18-100 Jahren.

Es sind keine Vorkenntnisse nötig. Die Ergebnisse werden anonym ausgewertet und ausschließlich für Forschungszwecke genutzt.

Ort: Universität Kassel (Holländischer Platz)

Dauer: ca. 1 Std.

Jede(r) Teilnehmer(in) erhält **25 Euro Aufwandsentschädigung**.

Derzeit sind folgende Termine geplant: **Mi., 12.02.2014, Fr., 14.02.2014, Mi, 19.02.2014 und Do., 20.02.2014 jeweils um 15: 30 und 17:30.**

Haben Sie an diesen geplanten Terminen keine Zeit und trotzdem Interesse an der Teilnahme? Dann melden Sie sich bitte unbedingt trotzdem; es findet sich sicher ein anderer Termin.

Interessierte können sich per Email an nkusa@uni-kassel.de anmelden (möglichst bis 03.02). Bitte machen Sie in der Email folgende Angaben:

Alter:

Haben Sie Kinder?

Haben Sie Geschwister?

(Wir benötigen diese Informationen, um die Gruppen in geeigneter Weise zusammenstellen zu können. Alle Daten, die wir von Ihnen erhalten werden selbstverständlich vertraulich behandelt und nach Ende der Gruppendiskussionen anonymisiert.)

Bitte geben Sie zudem an, welche von den obengenannten Terminen für Sie in Frage kommen (Bitte, mehrere Angeben). Zur Vereinfachung der Terminabstimmung bitten wir Sie die Handynummer anzugeben.

Für Fragen stehen wir Ihnen jederzeit gerne zur Verfügung

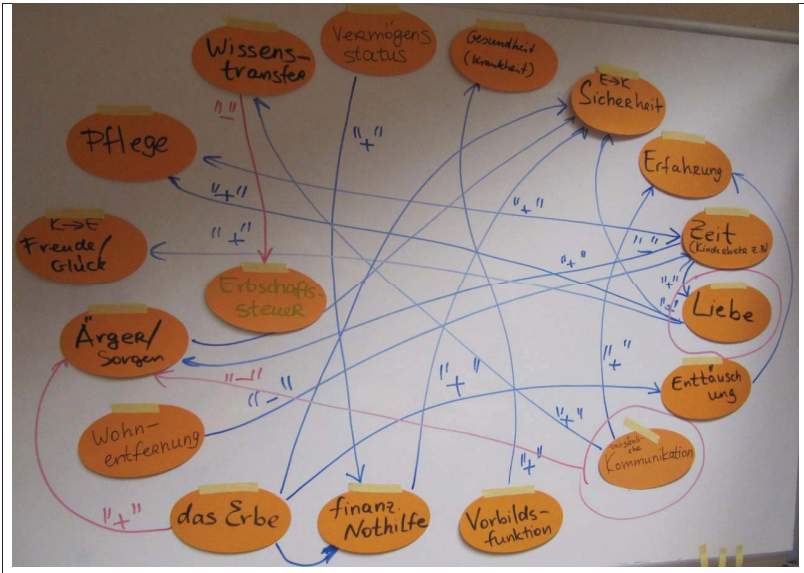
Wir freuen uns auf Sie.

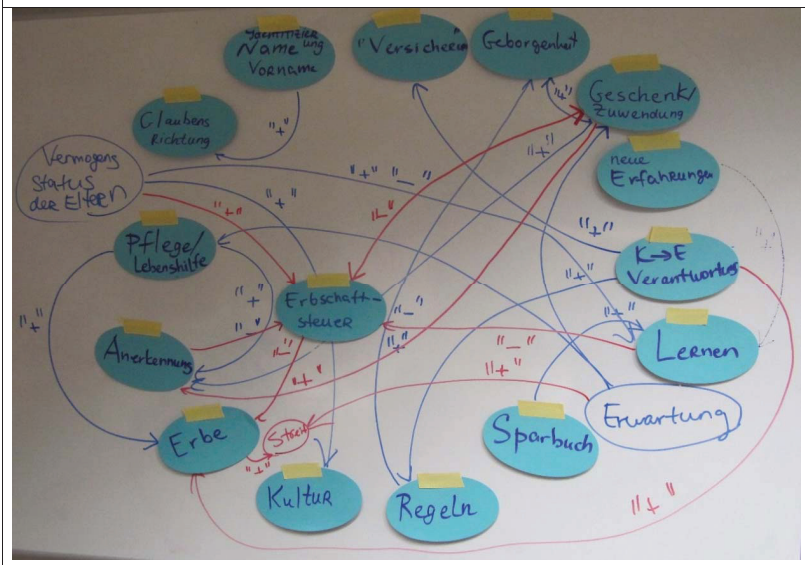
Nataliya Kusa, wissenschaftliche Mitarbeiterin am Institut für Volkswirtschaftslehrte, Universität Kassel

Next, we add a card with the concept "inheritance tax" to the graphic representation. We provided a short explanation that we are particularly interested in the inheritance taxation and its impact on the intra-familial relationships. The participants were asked to integrate the concept "inheritance tax" into their graphic representation using the same arrows as described above. The final result was photographed again (see Fig. 2 for some examples). Every focus group interview took approx. 1 hour, each participants was endowed with 25 euro at the end of the interview.

Using the audio recordings and graphic representations, we derived statements about beliefs and misperceptions regarding inheritance tax and IGT. Before we submitted the final version of questionnaire questions to GESIS, we conducted a large pre-test with students of Kassel University in May 2014. The pre-test was organized in “pen and paper” format during the lectures in political economy (with 330 students), game theory (with 70 students), financial accounting (80 students) and controlling and corporate Governance (90 students). It took approximately 20 min for students to fill in the questionnaire. Every tenth student who completely filled a questionnaire was endowed with 25 Euros. Finally, some 570 questionnaires were analysed.

Figure 3.2: Examples of mental maps created during focus group interviews (in German)





The first part of the survey comprised four open-ended questions (see Figure 3).

Figure 3.3: Pre-test question on subjects' concepts regarding IGT

The questionnaire focuses on the intergenerational relationships within families. In the following part, please think of families with grown up and working children who may have their own kids already.

1. Which concepts come to your mind when you think about (in this context) the following question: What do children get from their parents (in their lifetime and beyond)?

Please specify the concepts by giving an example if possible.

Concept 1_____

Concept 2_____

2. Which concepts come to your mind when you think about (in the abovementioned context) the following question: What do parents get from their children?

Please specify the terms by giving an example if possible.

Concept 1_____

Concept 2_____

We followed the Verges (1992) and used the technique of word evocation for quantification of qualitative answers, i.e. the concepts were grouped into categories. The main categories were financial transfers (inter vivos transfers, bequests), time transfers (LTC, babysitting), emotions and feelings (love, sympathy, conflict) and knowledge transfers (norms, religion, learn how to do it). The distribution of answers can be found in Table 3.1.

Table 3.1: Distribution of answers in the pre-test: categories of intra-familial transfers

Transfer type	Parent to adult child (downward transfers)	Adult Child to parent (upward transfers)
Financial transfers	284	83
Time transfers	40	161
Emotions and feelings	265	408
Knowledge transfers	264	49

Total of 571 observations. Please note that each student could name two concepts in each direction (but were not obliged to). Therefore, the categories do not sum up to the number of observations.

The second part of the questionnaire consisted of "closed" questions. We asked the subjects to state their preferences for the inheritance tax, beliefs regarding the family and intra-familial transfers. The questions were based on the theoretical literature and analysis of the focus group interviews. Subjects were confronted with the statements and should express their degree of agreement using a scale (from "strongly agree" to "strongly disagree"). Some examples of the statements can be found in Figure 4.

Figure 3.4: Statements from the pre-test with students

The old people refrain from giving inter vivos transfers because they fear to need the money for their own long-term care. They shun dependency on their children, which would be the case if they pass their wealth early.
When viewed as a whole (money, time, care), parents give much more to their children than they get back from them in the future.
Most heirs are 50 years or older at the time of the inheritance. They already made their life-choices long before the receipt of the inheritance. Therefore, the life of most heirs does not change fundamentally when receiving the inheritance.

We also asked some questions that captured the main reason for parents to transfer their estate inter vivos (tax savings, supporting their children or expressing trust in their children) and the questions capturing the knowledge about inheritance tax rate and wealth distribution in Germany. Summing up, the students believe that parents mainly transfer money, emotions and knowledge. Considering upward transfers, emotions is a highly dominant category, financial transfers do not seem to play substantial role. We looked at the distribution of the answers and did the first analysis using the tax acceptance as a dependent variable. The concepts (financial transfers, time transfers, etc.) did not have any effect on the tax acceptance. Sex, tax overestimation and general trust in government were found to have a significant effect.

Using the data from the pre-test data analysis, we formulated the final block of questions and submitted it to the GESIS Panel. We decided to exclude open-ended questions from the proposal, because the answering process was very time-consuming. After completing the application

process, our questions were submitted and distributed into two waves: 14 questions were asked in wave conducted in December 2014 - January 2015. The remaining 15 questions were asked in the next wave conducted in February - March 2015. We also got access to the previous waves and were thus able to use a large number of variables for our analyses.

4 Should Wealth Transfers be taxed? Citizens' View on a Fundamental Question[11]

4.1 Introduction

Since World War II, the industrialized world has seen an unprecedented accumulation of private wealth. Every year, portions of this wealth are passed on from one generation to the next. Wiktor (2010) estimate the average wealth transfers to exceed 4 trillion US-Dollars per decade in the next 50 years. In Germany alone, 4.6 billion € are to be transferred in the next decade (see Sieweck, 2011). Given these huge wealth transfers and the financial restrictions of the public sector in many countries, it is puzzling to see that democratic societies leave wealth transfers largely untaxed (e.g., Aura 2004; Dowding, 2008; Prabhakar, 2008; Beckert, 2013). Rather than making use of this massive tax base, many western countries have recently reduced the effective taxes on wealth transfers (e.g. Conway and Rork, 2004; Berttochi, 2010). This seems even more puzzling if we realize that the bulk of tax revenues from wealth transfer taxation stems from a small percentage of very high transfers. In Germany, around 90 percent of German inheritances are free of tax (e.g. Statistisches Bundesamt, 2013). In other words, the median voter can be certain not to pay taxes on wealth transfers but to benefit – in whatever form – from the extra budgetary means. Nevertheless, the acceptance even for a very moderate taxation of wealth transfers is low (e.g., Rowlingson and McKay, 2005; Hammar et al., 2008; Prabhakar, 2012). A representative survey among the German population in 2011 shows that the opposition against wealth transfer taxation is not primarily driven by citizens' discontent with the current tax schedule or details of its technical implementation. Instead, it seems to be rooted in a fundamental opposition against using wealth transfers as tax base: 55 percent of the respondents consider it wrong to tax wealth transfers at all (Postbank, 2011). Similar results are reported for other countries (Birney et al., 2006; Hammar et al., 2008). This fundamental opposition against wealth transfer taxation is the starting point of our study. Our main research question reads:

[11] This chapter is written in co-authorship with Ivo Bischoff (University of Kassel)

Which factors make so many other people oppose the taxation of private wealth transfers altogether.

There is a growing body of literature explaining citizens' policy preferences for other taxes (e.g., McCaffery and Baron, 2006; Ansolabehere, 2007). This literature shows that self-interest plays an important role: Subjects who expect to be burdened heavily by a certain tax tend to oppose it (e.g., Hammar et al., 2008). In the case of redistributive taxes, fairness preferences and the perceived inequality of the existing income distribution are found to drive policy preferences (e.g., Engelhardt and Wagener, 2014). The number of studies that focus explicitly on wealth transfer taxation is limited. 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., Sides, 2015; Kuziemko et al., 2013). For Sweden, Hammar et al. (2008) finds the acceptance for wealth transfer taxes to be lower among older citizens. Based on focus group discussions, Prabhakar (2012) finds the same result for the UK. Page et al. (2013) asks US citizens for the preferred tax rate on estates of different size and concludes that material self-interest plays a role in shaping citizens' attitude towards wealth transfer taxes.

While the existing studies provide valuable insights, they focus on citizens' evaluation of existing taxation schemes. In this paper, we focus on the factors that drive subjects' fundamental opposition against the taxation of inherited wealth. Choosing this focus by no means implies that we deny the fact that citizens' policy preferences regarding taxation are driven by the definition of tax base, the tax schedule etc. In fact, Germany witnesses a very controversial debate regarding the adequate way of taxing inherited family-owned businesses (e.g. Wrede, 2013). Nevertheless, this paper focusses on citizens' view on the fundamental question whether or not wealth transfers should be taxed at all. So far, systematic empirical evidence on this question is rare. To fill this gap, we analyze data from a survey among German citizens

conducted in 2014 and 2015. It asks subjects about their policy preferences regarding the inheritance tax – the form of wealth transfer taxation applied in Germany and other European countries. The survey contains biographical questions and a set of specially designed questions on long-term care, wealth transfers and the link between them.

Our main results can be summarized as follows: Our descriptive results strongly support the notion of a widespread fundamental opposition against the taxation of wealth transfers. Some 40 percent of respondents agree that inheritances beyond a certain size should be taxed while almost 60 percent oppose the taxation of wealth transfers altogether. The opposition is driven by material self-interest. It is higher among subjects who expect to receive wealth transfers in the future and lower among subjects whose parents are dead. Female subjects who are typically at the heart of intra-familial exchange relationships are more likely to oppose inheritance taxation than men. Redistributive aspects are also found to matter: Believing that wealth transfers flow primarily to high-income households increases support for inheritance taxation. Given that wealth transfers are just one element in the system of intergenerational transfers, we test whether the opposition against inheritance taxation depends on subjects' views and personal experience regarding long-term care. The personal experience of having given long-term care has no impact. Contrary to our hypothesis, we find the opposition to be lower among subjects who expect the typical family in Germany to give larger inheritances to children who provided long-term care. The question whether or not subjects regard this remuneration as fair does not influence their policy preferences.

The remaining paper is organized as follows: Section 2 reviews the related literature. In section 3, we present the data and main hypotheses. Section 4 presents the empirical results. In section 5, we discuss these results before section 6 concludes.

4.2 Review of Literature

4.2.1 Intra-familial Transfers and the Taxation of Wealth Transfers

Many European countries tax the private wealth transfers by an inheritance tax (e.g., Büttner et al., 2004; AGN Europe, 2014). This tax is levied on the wealth received by the heir and is paid by the heir – not by the bequeather. In many Anglo-Saxon countries, the tax is levied on the bequest left behind by the bequeather (so-called estate tax). Both inheritance and estate tax are accompanied by a tax on gifts among the living. In most cases, transfers taking the form of parents paying for their children's education are not taxed and tax exemptions are granted for inter-vivos transfers of wealth below a certain threshold (Büttner et al., 2004). In this section, we will not differentiate between inheritance and estate tax but speak generally of wealth transfer taxation. The main results reviewed here hold for both taxes. When we use the term wealth transfer tax(ation) in this paper, it refers to inheritance or estate tax plus the gift tax coming with it. In the empirical part of the paper, we will refer specifically to the inheritance tax because this is the form of wealth transfer taxation used in Germany where our survey is made (again accompanied by a gift tax).

There is a broad consensus among scholars that a substantial share of bequests are intentional (e.g., Hendricks, 2002). Bequests from parents to their children and transfers to surviving spouses that eventually are transferred to children account for the biggest part of intentional transfers (e.g., Szydlik 2004; Rowlingson and McKay, 2005). Two main motives behind intentional bequests are discussed in the literature. 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).[12] Altruistic motives imply that an

[12] Some models assume that parents may (also) be motivated by a joy-of-giving. We expect this motive to apply primarily to inter-vivos transfers. If present, the joy of giving will cause substantial inter-vivos transfers even in the absence of inheritance taxation (e.g., Gale and Slemrod, 2001).

increase in wealth transfer taxation causes parents to increase the amount of wealth transferred to their children (e.g., Atkinson, 1971; Bernheim, 2002). The tax exemption for inter vivos transfers provides incentives for parents to transfer some of their wealth inter vivos. Particularly high incentives are set to transfer wealth by paying for their children's education. In other words, the specific treatment of inter vivos transfers causes a sizeable timing effect if parents are altruistic (e.g. McGarry, 2000; Joulfaian, 2001).[13]

A number of authors argue that parents do not transfer wealth – inter vivos or in the form of bequests – for altruistic reasons. Instead, wealth transfers are seen as part of a system of exchange and direct reciprocity. Accordingly, 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;Cox and Rank, 1992). In this case, bequests are the "final payment" in a reciprocal relationship between generations. According to EU Report 'Long -Term Care of the Elderly: provisions and providers in 33 European Countries', between 7 and 21 percent of all employed caregivers reduced their working hours. Between 3 and 18 percent of the non-employed caregivers report that they had to quit work (European Union, 2012). 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.

The exchange relationship is sometimes formalized in a contract like the "Altenteil"-arrangements (Germany) made in the agricultural sector (e.g., Gjerde, 1997; Wagener, 2002). In many cases, however, a formal contract does not exist. Nevertheless, an implicit exchange contract may be in place. The exchange model of intergenerational transfers has implications

[13] Furthermore, altruistically motivated transfers imply Ricardian equivalence: Any government policy that increases parents' consumption at the expense of children's consumption will be neutralized by parents changing the amount transferred to their offspring.(e.g., Barro, 1974).

that differ considerably from the case where bequests are given by altruistic parents without expecting anything in return: First and most fundamentally, the inheritance tax places 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. With respect to inter-vivos transfers, these transfers are expected to be lower than in the case of altruistic motives. In particular, the incentives to invest in their children' education is lower because this increases their opportunity costs of providing parents with attention and long-term care (e.g., Blinkert and Klie, 2000).

4.2.2 Macroeconomic Aspects of Wealth Transfers Taxation

There are numerous studies focusing on the macroeconomic consequences of wealth transfer taxation. In their survey of OLG-models with intergenerational transfers, Cremer and Pestieau (2011) show that the impact of wealth transfer taxation on capital accumulation and efficiency depend on the motives driving these transfers. The optimal tax rate is zero if wealth transfers are motivated by pure altruism. In the case of other motives, both positive and negative tax rates are possible. Grossmann and Poutvaara (2009) develop an OLG-model with altruistic parents that accounts for the timing effect. Their model suggests that a small positive inheritance tax improves efficiency by enhancing the incentives to invest in their children' human capital. Kaplow (2010) argue that wealth concentration may have negative externalities through the concentration of political power. These extensions justify taxation on efficiency grounds.

Next to efficiency aspects, wealth transfer taxation is likely to have an impact on the distribution of income and wealth. Inequality in wealth distribution partly stems from unequal inheritances (HFCS, 2010). Using an OLG-model with heterogeneous households, Bossmann et al. (2007) show that – by increasing incentives to save – wealth transfer taxation can reduce the inequality in the distribution of wealth (see also Atkinson, 1980; Gale and Slemrod, 2001). On the other

hand, Kopczuk (2003) points out that the inheritance tax provides the opportunity to reduce income taxes. This creates an insurance effect that is especially beneficial for very wealthy individuals. Piketty and Saez (2013) study the efficiency-equity trade-off using an OLG approach with a social welfare-function that gives higher weights to the lower end of the income and wealth distribution. They show that – under reasonable assumptions regarding parameter values – the gains from a reduction in labor income taxations outweigh the losses from an increased inheritance taxation.

The lessons from the literature review can be summarized as follows: From a macroeconomic perspective, citizens' policy preferences may be influenced by whether or not they expect wealth transfer taxation to have a timing effect and by the expected distributional effect. Regarding intra-familial relations the literature provides arguments supporting the notion that subjects' policy preferences regarding the taxation of wealth transfers depend on the motive they believe to be driving these transfers. If the exchange motive dominates wealth transfers, they expect taxation to interfere with the system of intergenerational exchange within families. The effects are less far-reaching if wealth transfers are motivated by altruistic motives.

4.3 Data and Hypotheses

4.3.1 Data: The GESIS Panel

In this paper, we want to learn more about the factors that drive the widespread opposition against wealth transfer taxes. Our analysis is based on the representative survey among the German population performed by the Leibniz Institute for Social Sciences in Mannheim, Germany (GESIS Panel, 2015). Subjects go through numerous waves of questions on a wide range of different topics. GESIS invited scientists to submit blocks of questions and selected some of the blocks that successfully passed a review process. We submitted a block of questions focusing especially on the topic of intergenerational transfers and inheritance taxation. These questions were used in two survey waves in 2014 and 2015. When describing the data in the

upcoming sections, we 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. In this paper, we employ the data on all participants providing answers to all questions we draw on in the analysis. In the end, we our sample includes more than 1.400 individuals between the age of 19 and 71.

4.3.2 Dependent Variable

As stated in the introduction, we are not interested in citizens' assessment of the current German tax schedule but in the assessment of inheritance taxation in general. Thus, we ask them a very fundamental question (see Figure 4.1).[14]

Figure 4.1: Survey question on subjects' policy preference on inheritance taxation

"Many countries, among them Germany, levy taxes on inherited wealth. The opinions about the inheritance tax among the population are diverse. What do you think? Should inherited wealth that exceeds a certain amount generally be taxed, or should it not be taxed?"

- ☐ Yes, inherited wealth beyond a certain amount should generally be taxed
- ☐ No, inherited wealth should not be taxed.
- ☐ Don't know

We do not specify the "certain amount". Thereby, we accept that subjects are likely to have different amounts in mind when they answer the question. By allowing for different amounts, we are able to elicit subjects' fundamental position on inheritance taxation: All subjects who consider it right, in general, to tax inherited wealth will tick YES even if they do not agree on the "certain amount" beyond which taxation shall begin. At the same time, respondents who fundamentally oppose the taxation of inherited wealth will choose NO to express their

[14] The question was first by Postbank (2011).

fundamental opposition. The aim of our analysis is to identify driving factors behind this fundamental opposition.

Though our main research focus does not relate to the inheritance tax currently in place, we cannot exclude the possibility that subjects' knowledge about the current tax scheme influences their answers on the question stated above. For this reason, it is helpful to sketch the German inheritance tax briefly. It taxes private wealth transfers and is progressive with tax exemptions and tax rates depending on the degree of kinship between bequeather and recipient. The closer the relationship, the lower the tax rate and the higher the exemption. The inheritance tax is accompanied by a gift tax that applies the same schedule but allows substantial tax-free transfers among close relatives.

4.3.3 Independent Variables and Hypotheses

a) subjects' view on the relevance of the exchange motive

The literature reviewed in section 2 suggests that the answer to the tax acceptance question depends on whether or not subjects view bequests to be part of an intra-familial exchange relationship. The expected impact of inheritance taxation on intra-familial transfers provides the major argument: The tax wedge from the inheritance tax is likely to reduce the level of long-term care provided by family members if bequests are seen as part of a reciprocal exchange between generations. This runs against the widespread preference among elderly people to receive long-term care from family members (e.g., Tompson et al., 2013; Adam and Mühling, 2014). A comparable reduction of intra-familial caregiving is not expected when bequests are motivated by altruism. In addition, subjects who believe that the exchange motives matters may also expect the positive timing effects of inheritance taxation to be smaller than subjects who view altruistic motives as dominant. This leads to our first hypothesis.

H1 (exchange motive):

Subjects who regard bequests to be the last transfer in a system of exchange between generations are more likely to oppose inheritance taxation.

In the survey, we include the following vignette to capture the degree to which subjects view bequests as part of an exchange relationship (for the method of vignettes, see e.g., Rossi and Berk, 1985; Konow, 2009):

"The following questions deal with inheritance: Consider a couple with two grown-up daughters (Andrea and Beate). The couple has assets of 100.000 € and would like to settle the distribution of these assets between their daughters (in the form of inheritance). The daughters are equal with respect to marital status, number of children, income and health. The relationship between the couple and their daughters is good. Until recently, Andrea helped her parents to provide long-term care to her grandmother. For this reason, she only worked part time for three years and waived parts of her income whereas her parents continued to work as before. Her loss in income amounts to 40.000 €."

Subjects are asked to answer two questions: 1) "How should the couple divide the 100.000 € among their daughters? Which distribution do you personally regard as fair?" 2) "In reality, many couples are confronted with a situation similar to the one described above. What do you think? How do couples in reality typically divide their money?"

Subjects who state an unequal distribution of funds in favor of Andrea accept the exchange-model of intergenerational transfers as fair. The variable *fair_care_exchange* depicts the degree to which respondents consider it fair to compensate Andrea for her losses in income:

$$fair\_care\_exchange = \frac{proposed\_transfer\_to\_Andrea - 50.000}{20.000}$$

It is zero for all subjects proposing an equal division of the 100.000 € and positive for all subjects who propose some compensation. *fair_care_exchange* takes on the value 1 for those who suggest full compensation.

Subjects' answer to question 2 informs us about their expectations regarding the general acceptance of the exchange model in Germany. Subjects who state that the typical couple divides its money equally believe that the exchange model is not generally accepted. Subjects who expect an unequal distribution believe that the exchange model is generally accepted. The *expect_care_exchange* is calculated in the same way as *fair_care_exchange*.

It is important to note that the two variables capture distinctly different aspects of subjects' view on the role of bequests. *fair_care_exchange* captures the degree to which subjects consider it fair that long-term care provided by family members is "paid for" by unequal inheritances. *expect_care_exchange* captures the degree to which subjects expect that the average family in Germany does actually pay for it in the end.

Figure 4.2: Histogram of *fair_care_exchange* **and** *expect_care_exchange*

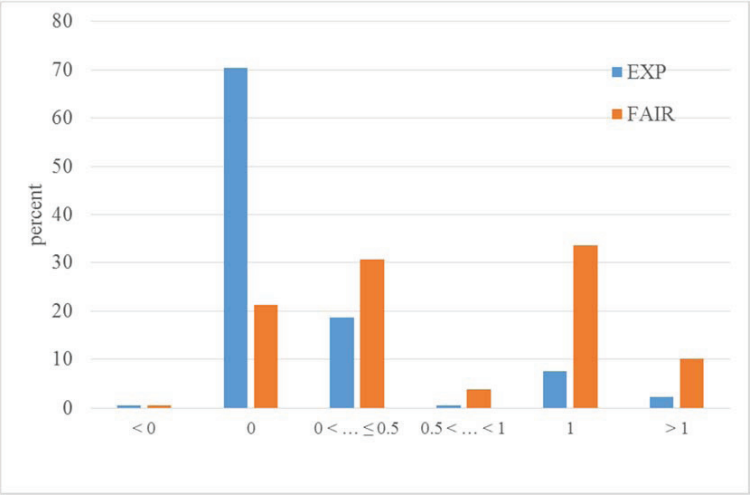


Figure 4.2 presents the histogram of the two variables. While a substantial share of respondents considered it fair to pay for the long-term care provided (at least partially), only a small fraction expect the typical German couple to compensate for long-term care received. The correlation *expect_care_exchange* and *fair_care_exchange* is negligible (R = 0.0022) – suggesting that subjects clearly differentiate between what they consider fair and what they expect their fellow-citizens to do.

b) monetary self interest

The existing literature shows that citizens are more likely to oppose taxes if they expect these to burden them heavily. This leads to our second hypothesis:

> ***H2 (monetary self-interest):***
>
> *Subjects expecting to receive a significant wealth transfers are less likely to support the inheritance tax*.

To capture monetary self-interest, we introduce three variables that capture the expected wealth transfers the subjects receive or expect to give. First, we directly ask subjects whether they expect to receive an inheritance in the near future. The dummy variable *expect_inheritance* is 1 for all subjects who do (0 else). Second, we asked subjects whether they or their parents own a house that has been in the hand of their family in earlier generations. The corresponding dummy variable *house_dynasty* takes on the value 1 for all those who gave an affirmative answer (0 else). Third, we account for subjects' *household_income* by calculating natural log of the equivalent household income using the OECD-square-root-rule (OECD, 2008).[15] Subjects from high-income households are more likely to leave bequests to their offspring who

[15] 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.

then may have to pay inheritance tax. Subjects' opposition against the taxation of inherited wealth is expected to increase *expect_inheritance, house_dynasty* and *household_income*.

Two additional variables are introduced to capture monetary self-interest: The dummy variable *children* is 1 for subjects with children (0 else). Subjects with children are more likely to oppose inheritance taxation. The variable *parents_dead* takes on the value 1 for all subjects whose parents are dead already. Latter subjects are less likely to inherit wealth and are thus less likely to oppose inheritance taxation.

c) the role of women in intergenerational transfers

The empirical literature on citizens' policy preferences clearly shows that women are more supportive of policy interventions that reduce inequality (e.g., Corneo and Grüner, 2002; Bischoff et al., 2013). At the same time, however, women are more likely to inherit wealth from their spouse and thus finally decide about its distribution between their offspring (e.g., Postbank, 2011). In addition, they deliver the largest part of childcare (to their own children and grandchildren) and long-term care (e.g., Haberkern and Szydlik, 2008; European Union, 2012; Adam and Mühling, 2014). But women are also more likely to be in need of long-term care when they are old. In sum, women are at the heart of intra-familial exchange relations. Consequently, they suffer more heavily from the tax wedge and the other micro-level negative consequences of inheritance taxation. This suggests that self-interest makes women more critical of inheritance taxation. Thus, we arrive at the following hypothesis:

H3 (women):

Women are more likely than men to oppose the taxation of inherited wealth.

We introduce a *female*-dummy (1 for female respondents, 0 for males). It is important to note that men and women do not differ in their answers to our vignette-related questions. In

particular, women and men are equally likely to consider a higher transfer to Andrea fair.[16] In other words, we do not observe a self-serving bias (e.g., Bischoff et al., 2013) to push women into accepting the exchange model of intergenerational relations as fair just because they are more heavily involved in intra-familial exchange.

d) inequality aversion

There is overwhelming evidence that citizens' policy preferences are shaped by fairness norms and a general inequality aversion (e.g., Beckert, 2013; Bischoff et al., 2013). Our corresponding hypothesis reads:

> ***H4 (inequality aversion):***
>
> *Subjects who believe that inherited wealth increases wealth inequality are less likely to oppose the taxation of inherited wealth.*

We ask subjects whether inheritances a) concentrate in high-income households, b) distributes equally across income classes or c) concentrate in low-income classes. Based on the answers, we construct a dummy variable (*inheritance_increase_inequality*) taking the value 1 for subjects who chose option a) (0 for others). Latter subjects are expected to be less opposed to inheritance taxation.

e) personal involvement in long-term care

Throughout this paper, we repeatedly argue that inheritances are just one element in a system of intergenerational transfers between family members. Giving long-term care has become the most important form of transfer in the last decade - the number of cases and the duration of needing long-term care has increased dramatically (e.g., European Union, 2012; Adam and Mühling, 2014). The degree to which people think about long-term care when thinking about

[16] The correlation between *female* and *fair_care_exchange* and *expect_care_exchange* is negligible (-0.03 and 0.01 respectively).

inheritance taxation is likely to depend on their personal exposure to the issue of long-term care. To account for this, we ask subjects for their personal experience regarding long-term care. The variable *care_in_family* takes on the value 1 for all subjects who reported that a member of their greater family received long-term care in the last five years (0 else). The variable *gave_care_personally* is 1 for all subjects who stated that they were involved in providing long-term care to a family member for a period of three months or longer (0 else). This includes subjects who only assisted occasionally while the main care-giving was in the hands of others (including commercial providers). The variable is 0 for subjects who never provided long-term care.[17]

f) inheritance-related beliefs and general political attitudes

Arrondel and Masson (2001) argue that the pattern of intergenerational transfers observed in many countries emerges from a system of indirect reciprocity. Accordingly, a certain generation of old people transfers wealth and time to the younger generation because they received the same support when they were young. Similarly, the young provide the old with attention and long-term care because they observed their parents to do the same when the latter were young. Arrondel and Masson (2001) argue that having observed intra-familial transfers among preceding generations establishes a social norm that is passed on together with the wealth, attention etc. They call this the "demonstration effect" (see also Brandt et al., 2009). We capture the existence of a demonstration effect and the corresponding social norm in a question on inter-vivos transfers that parents give to their children when the latter start their own family. The question confronts subjects with two statements and asks them to tick the one that more closely represents their own view. One statement says that people who receive start-up support from their parents are morally obliged to support their own children in the same way. The second

[17] In an alternative specification, we used a more narrow definition capturing only subjects who provided long-term care on a regular basis. The results do not change (see supplementary material).

statement says that every generation has to decide for itself whether or not to give their children start-up support. We construct a dummy variable *indirect_reciprocity* that takes on the value 1 for subjects who tick the first statement (0 else). It captures the degree to which subjects generally accept that transfers from preceding generations create a moral obligation to behave accordingly. We expect subjects who adhere to the social norm to keep up the system of indirect reciprocity are more likely to oppose inheritance taxation. They do so for similar reasons as those who regard bequests as a part of an intergenerational system of directly reciprocal exchange (see hypothesis H1).

Slemrod (2006) and Sides (2015) show that the acceptance of inheritance taxation is lower among subjects who overestimate the share of subjects who have to pay this tax. Given our very general nature of our question (see Figure 4.1), it is unclear whether subjects' knowledge about the existing inheritance tax schedule influences their answers. If they regard the question to be a purely fundamental question about whether or not inherited wealth should serve as a tax base, it should not. On the other hand, people may anchor on their knowledge about the current tax scheme when they ask themselves what kind of tax they support if they tick YES. In this case, their knowledge matters. We use a question on the expected tax liability to differentiate between subjects with a biased perception of the effective tax burden from inheritance tax and subjects with a realistic perception. We ask subjects to state the tax liability of a child inheriting a bank deposit with 100.000 €. We construct a dummy variable *tax_overestimation* that takes on the value 1 for those who overestimate the tax burden (0 else).

We also ask subjects what they regard as the most important motive for parents to give inter-vivos transfers to their children: 1) to express their trust in their children; 2) to save inheritance taxes, 3) to give a start-up support to their children. By ticking option 2, subjects express their belief that the inheritance tax has a timing effect (see section 2). We construct a dummy variable *expect_timing* to capture this belief. It is 1 for subjects who ticked option 2 (0 else). Given that

the timing effect is generally regarded as a positive aspect of inheritance taxation, we expect the opposition against inheritance taxation to be smaller among subjects who expect a timing effect.

We also control for citizens' trust in the (federal) government. The variable *trust_in_government* is 1 for those subjects who have much or very much trust in the German government (0 else). The lower the trust, the more reluctant citizens are to support any kind of tax.

g) control variables

Brandt et al. (2009) report a negative correlation between the intensity of intergenerational exchange and physical distance between the home of parents and children. Brandt et al. (2009) furthermore argue that parents living far away tend to transfer money to their children, because it is very costly to provide attention and time (e.g. in the form of childcare). Thus, living far away from one's parents increases the probability of having to pay inheritance taxes. The variable *distance_to_parents_30_diriving_minutes_or_more* takes on the value 1 if the distance between subjects and their parents is 30 driving minutes or more (0 else). The dummy variable *parents_in_same_house* takes on value 1 if subjects' parents live in the same household or in the same house.

We introduce the natural logarithm of subjects' age (*log_age*) because age defines the expected proximity to death and increases the probability of requiring long-term care. The findings of Hammar et al. (2008) and Prabhakar (2012) suggest that acceptance for inheritance taxation decreases with age. The dummy *married* takes on the value 1 for the subjects who are married (or in civil union) and currently live together with their spouse (0 else). We construct a dummy *high_education* that takes on the value 1 for subjects whose school education qualifies them to enter higher education (0 else). We ask subjects whether they have received an inheritance in

the recent past. The dummy *received_inheritance* takes on the value 1 if the answer is affirmative (0 else).

4.4 Empirical Analysis

Based on the data described in section 3, we address the following question: What make people oppose inheritance taxation? We use subjects' answers to the question in figure 4.1 to create binary variable *oppose_inh_taxation* that takes on the value 1 for subjects who state that inheritances should not be taxed (0 else). Some 60 percent of all respondents ticked this option. We use a Probit-model to estimate the impact of the independent variables described above. Descriptive statistics for all variables are provided in table 4.1.

Table 4.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
oppose_inh_taxation	3,454	0.57	0.49	0	1
fair_care_exchange	3,013	0.70	0.52	-1.5	2.5
expect_care_exchange	2,947	0.20	0.38	-2	2.5
expect_inheritance	3,180	0.12	0.33	0	1
house_dynasty	3,211	0.26	0.44	0	1
household_income	2,594	7.43	0.47	5.99	8.41
parents_dead	3,441	0.27	0.44	0	1
children	3,152	0.72	0.45	0	1
female	3,454	0.51	0.50	0	1
care_in_family	3,207	0.41	0.49	0	1
gave_care_personally	3,191	0.29	0.45	0	1
inheritance_increase_inequality	3,015	0.75	0.44	0	1
indirect_reciprocity	3,276	0.23	0.42	0	1
tax_overestimation	2,679	0.56	0.50	0	1
expect_timing	3,221	0.34	0.48	0	1
trust_in_ government	3,300	0.13	0.33	0	1
parents_in_same_house	3,441	0.13	0.33	0	1
distance_to_parents_30_diriving_minutes_or_more	3,441	0.25	0.43	0	1
log_age	3,443	3.81	0.34	2.94	4.26
married	3,451	0.59	0.49	0	1
high_education	3,451	0.44	0.50	0	1
received_inheritance	3,182	0.35	0.48	0	1
neuroticism	3,274	5.71	1.67	2	10
extraversion	3,278	6.46	1.77	2	10
openness to experience	3,291	6.77	1.72	2	10
agreeableness	3,271	6.20	1.42	2	10
conscientiousness	3,269	7.84	1.43	2	10

Table 4.2 presents the regression results including marginal effects. In our baseline model in column 1, we include all variables described above. The performance of our vignette-related variables is not in line with hypothesis H1: *fair_care_exchange* is insignificant and *expect_care_exchange* is significant but with a negative sign instead of the predicted positive one. Among the variables capturing subjects' material self-interest, *house_dynasty*, *household_income*, *children*, and *parents_dead*, are significant – all with the predicted sign. Subjects whose parents are dead are less likely to oppose inheritance taxation while the opposition is stronger among subjects with children, high household income and house ownership within the family for generations. Thus, hypothesis H2 is strongly supported. As hypothesized (H3), female respondents are more likely to oppose inheritance taxation. The significantly negative sign of *inheritance_increase_inequality* is in line with hypothesis H4: Subjects who expect the inheritances to concentrate in high-income families are less likely to oppose inheritance taxation in general. Overestimating the tax burden of small inheritances increases the opposition for inheritance taxation while trust in the government reduces it. Somewhat surprisingly, *expect_timing* is significant with a positive sign. Even more surprising, we find the opposition for inheritance taxation to decrease in subjects' age. Subjects with high-school education and subjects living in same house with their parents are less likely to oppose inheritance taxation. All other variables are insignificant.

Table 4.2: Basic regression models

VARIABLES	Coeff	ME	Coeff	ME	Coeff	ME	Coeff	ME
fair_care_exchange	-0.0315	-0.011	-0.0404	-0.014	-0.0938	-0.015	0.0100	-0.013
	(0.0713)	(0.0267)	(0.0736)	(0.026)	(0.0897)	(0.026)	(0.103)	(0.026)
expect_care_exchange	-0.243**	-0.088**	-0.270***	-0.097***	-0.278***	-0.099***	-0.267***	-0.095***
	(0.0951)	(0.034)	(0.0987)	(0.035)	(0.0991)	(0.035)	(0.0988)	(0.035)
expect_inheritance	0.00223	0.0008	0.00924	0.003	0.00591	0.002	0.00832	0.003
	(0.106)	(0.038)	(0.108)	(0.039)	(0.108)	(0.039)	(0.108)	(0.039)
house_dynasty	0.202**	0.073**	0.188**	0.067**	0.192**	0.069**	0.188**	0.067**
	(0.0830)	(0.030)	(0.0857)	(0.031)	(0.0858)	(0.031)	(0.0857)	(0.031)
household_income	0.178**	0.064**	0.174**	0.062**	0.175**	0.063**	0.171*	0.061**
	(0.0847)	(0.030)	(0.0872)	(0.031)	(0.0872)	(0.031)	(0.0873)	(0.031)
parents_dead	-0.216**	-0.079**	-0.213**	-0.077**	-0.215**	-0.078**	-0.212**	-0.077**
	(0.103)	(0.038)	(0.107)	(0.039)	(0.107)	(0.039)	(0.107)	(0.039)
children	0.227**	0.081**	0.211**	0.075**	0.210**	0.074**	0.213**	0.076**
	(0.0965)	(0.034)	(0.100)	(0.035)	(0.100)	(0.035)	(0.100)	(0.035)
female	0.191***	0.069***	0.197**	0.071**	0.197**	0.071**	0.270**	0.071**
	(0.0719)	(0.026)	(0.0791)	(0.029)	(0.0791)	(0.029)	(0.131)	(0.029)
care_in_family	-0.0260	-0.009	-0.0278	-0.010	-0.0269	-0.016	-0.0293	-0.010
	(0.0739)	(0.027)	(0.0767)	(0.027)	(0.0767)	(0.031)	(0.0767)	(0.027)
gave_care_personally	-0.0571	-0.021	-0.0420	-0.015	-0.159	-0.010	-0.0432	-0.015
	(0.0832)	(0.030)	(0.0860)	(0.031)	(0.142)	(0.027)	(0.0860)	(0.031)
inheritance_increase_inequality	-0.327***	-0.118***	-0.291***	-0.104***	-0.291***	-0.104***	-0.291***	-0.104***
	(0.0856)	(0.030)	(0.0890)	(0.031)	(0.0890)	(0.031)	(0.0890)	(0.031)
indirect_reciprocity	-0.0738	-0.027	-0.0555	-0.020	-0.0615	-0.022	-0.0554	-0.020
	(0.0864)	(0.031)	(0.0891)	(0.032)	(0.0893)	(0.032)	(0.0891)	(0.032)
tax_overestimation	0.168**	0.061**	0.179**	0.065**	0.180**	0.065**	0.178**	0.064**
	(0.0739)	(0.027)	(0.0766)	(0.028)	(0.0766)	(0.028)	(0.0766)	(0.028)
expect_timing	0.153**	0.055**	0.126*	0.045*	0.127*	0.045*	0.125*	0.045*
	(0.0735)	(0.026)	(0.0757)	(0.027)	(0.0758)	(0.027)	(0.0758)	(0.027)
trust_in_ government	-0.214**	-0.077**	-0.248**	-0.089**	-0.251**	-0.089**	-0.246**	-0.088**
	(0.102)	(0.037)	(0.107)	(0.038)	(0.107)	(0.038)	(0.107)	(0.038)

Continuation table	Coeff	ME	Coeff	ME	Coeff	ME	Coeff	ME
parents_in_same_house	-0.327**	-0.116***	-0.360***	-0.127***	-0.362***	-0.128***	-0.363***	-0.128***
	(0.128)	(0.045)	(0.134)	(0.046)	(0.134)	(0.046)	(0.134)	(0.046)
distance_to_parents_30_driving_ minutes_or_more	-0.0676	-0.024	-0.0783	-0.028	-0.0819	-0.029	-0.0797	-0.028
	(0.0948)	(0.034)	(0.0985)	(0.035)	(0.0986)	(0.035)	(0.0985)	(0.035)
log_age	-1.043***	-0.376***	-1.067***	-0.381***	-1.068***	-0.381***	-1.067***	-0.381***
	(0.164)	(0.056)	(0.172)	(0.059)	(0.172)	(0.059)	(0.172)	(0.059)
married	-0.0648	-0.023	-0.0812	-0.029	-0.0806	-0.029	-0.0808	-0.029
	(0.0835)	(0.030)	(0.0866)	(0.031)	(0.0866)	(0.031)	(0.0867)	(0.031)
high_education	-0.385***	-0.138***	-0.362***	-0.129***	-0.362***	-0.129***	-0.362***	-0.129***
	(0.0787)	(0.028)	(0.0817)	(0.029)	(0.0817)	(0.029)	(0.0817)	(0.029)
received_inheritance	-0.00636	-0.002	-0.0276	-0.010	-0.0284	-0.010	-0.0268	-0.010
	(0.0792)	(0.029)	(0.0815)	(0.029)	(0.0815)	(0.029)	(0.0815)	(0.029)
neuroticism			-0.0360	-0.013	-0.0358	-0.013	-0.0368	-0.013
			(0.0233)	(0.008)	(0.0233)	(0.008)	(0.0233)	(0.008)
extraversion			-0.00636	-0.002	-0.00656	-0.002	-0.00607	-0.002
			(0.0218)	(0.008)	(0.0218)	(0.008)	(0.0218)	(0.008)
openness_to_experience			0.0156	0,0056	0.0147	0,0053	0.0159	0,0057
			(0.0217)	(0,008)	(0.0217)	(0,0088)	(0.0217)	(0,008)
agreeableness			-0.000742	-0.0003	0.000164	0.00006	-0.00113	-0.0004
			(0.0259)	(0.009)	(0.0259)	(0.010)	(0.0259)	(0.009)
conscientiousness			0.0727***	0.026***	0.0741***	0.026***	0.0727***	0.026***
			(0.0272)	(0.010)	(0.0273)	(0.010)	(0.0272)	(0.010)
gave_care_personallyl#fair_care exchange					0.162			
					(0.155)			
female#fair_care_exchange							-0.102	
							(0.146)	
Constant	2.976***		2.677***		2.699***		2.668***	
	(0.828)		(0.912)		(0.913)		(0.911)	
pseudo-R^2	0.0904		0.0975		0.0981		0.0978	
χ^2-Stat	174.47***		177.52***		178.61***		178.00***	
Observations	1,393		1,313		1,313		1,313	

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

In model 2, we accommodate a recent trend in the related literature and account for the impact of personality traits on political attitudes. Recent studies show that subjects' personality traits predicts their self-placement on ideological scales as well as their voting behavior (e.g., Caprara et al., 2006; Gerber et al., 2010) even though the theoretical underpinning for these findings is still ad hoc (e.g., Gerber et al., 2011). The GESIS Panel uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions *neuroticism, openness_to_experience, agreeableness, conscientiousness, extraversion* on a 5-point Likert-like scale. Two questions are devoted to each personality trait and subjects' score is combined to an ordinal measure capturing the degree to which a certain trait is present within the subject. Following the standard procedure in the political psychology literature, we use the ordinal measure as exogenous variable (e.g., Müller and Schwieren, 2012). We find *conscientiousness* to increase the level of opposition against inheritance taxation while the other personality traits do not yield significant coefficients. The variable *expect_timing* seizes to be significant. The performance of all the other variables is unchanged.

In model 3 and 4, we introduce the interaction of *fair_care_exchange* with *gave_care_personally* and *fair_care_exchange* with *female* respectively. The rationale behind these models is the following: Hypothesis H1 predicts that subjects who consider it fair that long-term care is paid for through higher inheritances are more likely to oppose inheritance taxation. While the sign of *fair_care_exchange* is generally in line with this prediction, the coefficient estimator is far from significant. Possibly, the underlying fairness preference only drives policy preferences among subjects who have been personally involved in giving care and thus consider it fair to be personally remunerated. In this case, the interaction *fair_care_exchange* _X_*gave_care_personally* is expected to yield a negative coefficient estimator. A similar argument can be made for women who are much more heavily involved in

intra-familial exchange relations. The interaction terms do not generate significant coefficient estimators, nor do the corresponding plots show significant marginal effects (see figures 4.3).

Figure 4.3a: Marginsplot of the interaction *gave_care_personally #fair_care_exchange*

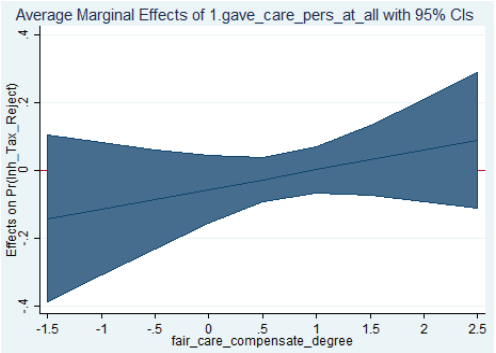
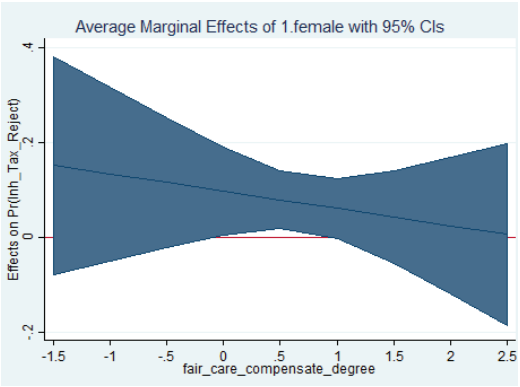


Figure 4.3b: Marginsplot of the interaction *female#fair_care_exchange*



Looking at the marginal effects we find a number of variables to have a sizeable influence on the probability that subjects oppose the taxation of inherited wealth. *high_education* reveals the largest marginal effect of around -13 percentage points, followed by *parents_in_same_house* and *inheritance_increase_inequality* with almost -12. *expect_care_exchange* reduces the

probability of opposing inheritance taxation by 9 percentage points. The probability that female subjects oppose inheritance taxation is by 7 percentage points larger than among men. Marginal effects around 7-8 percentage points are reported for the self-interest variables *house_dynasty* (+), *children* (+), and *parents_dead* (-). An increase in equivalent household income of 500 € increases the probability of opposing inheritance taxation by 1.6 percentage points. Overestimating the tax burden for small inheritances raises the probability by 6 percentage points while trusting the government reduces it by around 8 percentage points. Finally, the marginal effect of age is -0.83 percentage points per year.

We run a number of additional models not reported in this paper. In these analyses, we introduce a number of additional variables. These include additional biographical variables like *born_outside_germany* and the self-reported quality of family relations. Other variables are based on a set of questions on subjects' beliefs and attitudes broadly related to inheritance taxation. For instance, we ask subjects whether they believe that parents in Germany neutralize the intergenerational consequences of government policies by adjusting savings as implied by Ricardian equivalence (e.g., Barro, 1974). Next, we ask subjects whether they agree with the statement "The major decisions in life are made by the time heirs receive their inheritance. Thus, receiving an inheritance does not change the heirs' life in substance." We introduce variables that inform us about subjects' general attitude regarding the optimal division of labor between family and government. Subjects who are critical about governments playing an active role in childcare or favor a more active role of the family in general may regard inheritance taxation as an undue intrusion into family matters (e.g., Beckert, 2007). None of the additional variables yields significant coefficient estimators, nor do they change the performance of the variables used in table 4.2. [18]

[18] The results of the models described here are available as supplementary material upon request.

4.5 Discussion

Surveys show that majority of German citizens do not want inherited wealth to be taxed. In this paper, we present an empirical analysis of the driving factors behind this opposition against the taxation of inherited wealth. Some of the results are well in line with the theoretical predictions while others are not. We find strong support for our hypothesis H2 (monetary self-interest): The opposition against inheritance taxation is higher among subjects who (or whose family) are more likely to be burdened by inheritance taxes and it is lower among subjects who are less likely to be burdened by the tax because their parents are dead already. We also find strong support for our hypothesis H3: Women oppose inheritance taxation more strongly than men are even though inheritance taxes have the potential to reduce inequality – a policy objective that is particularly important for women (e.g., Corneo and Grüner, 2002; Bischoff et al., 2013). This suggests that self-interest dominates fairness arguments in the case of inheritance taxation. Our results are well in line with the literature showing that inequality aversion drives policy preferences (H4): Subjects who expect inheritances to concentrate in high-income households are less likely to oppose inheritance taxation. In line with theory and previous studies, our results show that opposition is less likely among subjects who trust the government and higher among those who overestimate the tax burden of the current tax regime.

Some of our results are at odds with the existing literature. First, the strong and negative impact of age contradicts the result of previous studies (e.g., Hammar et al., 2008; Prabhakar, 2012). One might put forward a formal argument to rationalize this result: In the German inheritance tax, it is not the bequeather but the recipient who formally bears the tax burden. In addition, one might argue that wealth transfers are accumulating over generations so that the young generation is more likely to be burdened by the inheritance tax than the middle generation and the middle generation is more likely to be burdened than the old generation. These explanations

are, however, ad hoc. Further research is needed to understand the impact of age on policy preferences regarding inheritance taxation.

The most puzzling result is the performance of our vignette-related variables. Our central hypothesis (H1) states that subjects who view inheritances as the last payment in a relationship of intergeneration exchange are more likely to oppose inheritance taxation. The insignificance of *fair_care_exchange* does not support this hypothesis. Believing that it is fair to remunerate care-giving through higher inheritances does not make subjects more critical about inheritance taxation. This result holds even when *fair_care_exchange* is interacted with variable capturing subjects' personal involvement in care-giving. It is equally puzzling to see that the variable *expect_care_exchange* is significant with a negative rather than the predicted positive sign: Subjects who expect parents to compensate care-giving heirs with higher inheritances are less likely to oppose inheritance taxation. One possible explanation for this result is the following: Subjects who expect the typical family in Germany to reward the care-giving child by a larger inheritance may argue that parents makes use of the possibility to offset some of the negative effects of inheritance taxation on their children's willingness to provide care. Thus, these subjects are less concerned about the tax wedge from inheritance taxation than are subjects who do not expect the typical family to make use of this possibility. Second, one can argue that monetary payment in exchange for long-term care resembles paid labor and thus – just like labor income – should be taxed. However, these explanations are again ad hoc and further research is needed to explore the role of citizens' view on intra-familial transfers of wealth and time in more detail.

Beyond the task of explaining policy preferences, the answers to the vignettes themselves provide an additional subject of inquiry: What differentiates citizens who consider it fair to pay for long-term care via higher inheritances from those who do not? Why do so many subjects support an unequal distribution in favor of Andrea while at the same time so few of them expect

the typical German family to actually give more to Andrea in the end? These are interesting questions for further research.

From a methodological perspective, our study once again supports the value of using vignettes to elicit subjects' views on specific issues. In particular, they prove a suitable tool to elicit independent answers to the question of what subjects consider fair and what they expect their fellow-citizens to do. Especially from an economic perspective, this distinction is essential. Our result suggests that economists should make much more use of this instrument (e.g., Rossi and Berk, 1985; Konow, 2009).

Finally, our study contributes to the increasing body of literature on the impact of personality traits on policy preferences. The performance of *conscientiousness* is in line with the previous literature: Conscientious subjects are more likely to oppose inheritance taxation. While these results support the notion that personality matters for policy preferences, we cannot provide a straightforward explanation why this is the case. More research is needed on the theoretical underpinnings (e.g., Gerber et al., 2011). Economic experiments may be a suitable instrument to help progress in this field (e.g. Müller and Schwieren, 2012; Bischoff and Ihtiyar, 2015) as they enable scholars to control the environment more fully and thereby discriminate between possible chains of cause and effect that are difficult to disentangle using survey data.

4.6 Conclusion

Wealth transfers of unpreceded volume await the middle and young generation in the developed worlds in the next decades. Given the tight budget constraints that many countries face recently, it seems surprising that so many citizens prefer to leave these wealth transfers largely untaxed. To understand where the resistance may come from, we provide a first comprehensive study on the driving factors behind citizens' policy preferences regarding inheritance taxation. It is based on a representative survey among German citizens in 2014 and 2015. The essential survey question asks subjects for their fundamental policy preference regarding the taxation of wealth

transfers: Should inherited wealth be taxed? We chose this fundamental question instead of a question that asks for the acceptance of a specific taxation scheme or reform proposal because we are convinced that the strong opposition against inheritance taxation often results from a very fundamental opposition. Many people think that inherited wealth should not be taxed at all. The answers in our survey strongly support this conviction: Some 60 percent state that they oppose the taxation of inherited wealth altogether. The aim of this study is to learn more about the factors that drive this fundamental opposition.

In line with studies on other taxes, material self-interest, redistributive preferences and the perceived tax burden are found to influence citizens' acceptance for the taxation of inheritances. Unlike the few other studies on wealth transfer taxation, we find tax acceptance to increase rather than decrease in age. We argued that it is necessary to go beyond the scope of these standard factors and account for the fact that inheritances are just one element in a system of intergenerational transfers within families. In particular, it is necessary to account for the fact that many citizens assume a nexus between inheritances and long-term care provided to family members. When inheritances are part of an intergenerational exchange, inheritance taxes are harmful for intra-family transfers. They drive a tax wedge between the "price" the old generation has to pay for long-term care and the "price" the younger generations receive for providing long-term care. Thus, we hypothesized that subjects who regard inheritances as part of an exchange between generations are more critical of inheritance taxation. However, we find support for the opposite: Support for inheritance taxation is higher among subjects who expect the typical German family to give higher inheritances in exchange for long-term care received. Whether or not this remuneration is regarded as fair does not influence subjects' policy preferences, nor do we find any evidence that the individual or family history in long-term care provision drives policy preferences.

In future research projects, it seems a promising endeavor to explore in more detail subjects views on the mechanisms underlying the intergenerational transfer of time and wealth and their implications for wealth transfer taxation and other policies related to intergenerational and intra-familial relations. From a methodological perspective, our paper has – once more – underlined the potential of vignettes as an instrument to elicit subjects' beliefs and preferences in surveys. A deeper understanding of citizens' beliefs and preferences is important in studies like ours where we investigate the public acceptance of different public policy measures. However, it is likely to be helpful also when it comes to understanding citizens' behavior in general and their reaction to public policies in particular.

5 Citizens' Preferences for a Tax Relief for Caregivers in Inheritance Taxation – an Empirical Analysis using German Survey Data[19]

5.1 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 Szydlik, 2004; Kopczuk and Lupton, 2007). Bequests from parents to their children and transfers to surviving spouses account the biggest share of private wealth transfers (e.g., Szydlik 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 Cox and Rank, 1992). Accordingly, bequests and gifts are given in reciprocal exchange for attention, time and LTC. 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 intra-familial exchange between generations.

Four long-term trends make this tax wedge 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

[19] This chapter is written in co-authorship with Ivo Bischoff (University of Kassel)

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 two challenges, i.e. reduce fiscal pressure and inequality in the 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-familiar 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., Birney et al., 2006; Hammar et al., 2008; Ernst and 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 relief for wealth transfers given to caregiving recipients. There is, of course, a number of arguments that stand against this tax relief. 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 relief 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 relief 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 relief for caregiving heirs. We use this survey data to learn more about the factors that make some subjects support the tax relief and others oppose it.

Our results can be summarized as follows: Some 80 percent of the respondents support the proposal to introduce a tax relief for caregiving heirs. We find support for the impact of self-interest: Support for the tax relief is higher among subjects whose parents are alive and who are thus more likely to benefit from the tax relief. Subjects who have been personally involved in providing LTC to relatives are more likely to support the tax relief. We conclude that their personal experience makes them more aware of the severe burden caregivers often bear and want to see it gratified and/or want to improve the opportunities to organize additional help from family care assistants. 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. Subjects are more likely to support the tax relief if they adhere to the social norm of indirect reciprocity or overestimate the tax burden of the German inheritance tax.

The remainder of the paper is organized as follows: Section 2 provides a review of the relevant literature and section 3 introduces the reader to the German institutional background. 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.

5.2 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.[20] Some scholars argue that

[20] 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

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 grandchildren (e.g., Bernheim et al., 1985; Cox and Rank, 1992). In this case, bequests are the "final payment" in a reciprocal relationship between generations. Empirical studies indicate that this form of reciprocal exchange is empirically relevant. In their study on 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 (see also Angelini, 2007 and Norton et al., 2013). These results do not rule out the relevance of altruistic motives. However, they strongly suggest that there is at least some nexus between the time, attention and long-term care a person provides to their parents and the wealth transfers this person receives.

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 quite 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)

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 relief on caregiving heirs may be more or less harmful if one of the two motives – exchange or altruism – dominates intergenerational transfers.

analyzes data from National Longitudinal Survey of Mature Women and find that parent are more likely to give inter vivos transfers to siblings who provided informal care than to siblings who did not care.

The question whether exchange or altruistic motives dominate intergeneration transfer relations is crucial when it comes to assessing the impact of wealth transfer taxation. In the logic of the exchange model, 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 shows 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 limited. 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).[21] Furthermore, Slemrod (2006) shows that subjects generally expect wealth transfer taxes in the US to burden more citizens than they actually do. The acceptance of wealth transfer taxation is

[21] 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 relief 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 reliefs 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 relief is low.

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 (2016), 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. Almost 60 percent oppose inheritance taxation. The paper supports previous studies in showing that tax preferences are shaped by material self-interest: Opposition against inheritance taxation is lower among subjects whose parents are dead while it increases in household income. Subjects who overestimate the effective tax burden are more likely to oppose inheritance taxation. Redistributive aspects are found to matter: Believing that wealth transfers flow primarily to high-income households reduces opposition against inheritance taxation. Bischoff and Kusa (2016) find that women who are typically at the heart of intergenerational exchange relations are more likely to oppose inheritance taxation than men are. 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.

5.3 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 does 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.

Simultaneous to the increase of wealth transfers, Germany witnesses a massive increase in the number of elderly people requiring long-term care (herafter LTC). For 2007, the Federal Statistical Office counted 2.25 million citizens officially registered to require LTC (e.g., Husmann, 2010). Roughly, one third of the care recipients resides in a nursing home and receive LTC from professional care workers. The other two thirds receive 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). Three categories of home care can be distinguished. The first category comprises all citizens who receive LTC from professional care workers at home (approx. 500.000 in 2007). The majority of citizens receive home care without noteworthy support from professional care workers (approx. 1 million in 2007). For them, home care services are provided by non-professional caregivers. We follow Kluzer et al. (2010) and distinguish between carers and family care assistants. Carers are family members who do not receive any monetary compensation on a regular basis but only occasional cash benefits or allowances.[22]

[22] Note that in some cases friends, neighbors and volunteers can be carers as well. However, there are typically family members who provide unpaid LTC on a regular basis.

Carers often reduce their working hours when they start to provide home care. About 15 percent of them stop working entirely (e.g., Schmidt and Schneekloth, 2011) Thus, carers incur income losses during the time they provide home care to a family member. Family care assistants are non-relatives who do not work for nursing services but exclusively for the care recipients provide home care. In many cases, they work without wage contract and/or without social insurance. The category of family care assistants comprises illegal migrants from low-income countries as well as legal German residents who do not declare their salary. The empirical relevance of the latter category is difficult to assess because the arrangements are mostly based on informal contracts.[23] Pedelabat (2012) estimates that approximately 100.000 female migrants work fulltime in providing LTC to German citizens in 2010.

Regarding the remuneration, carers may provide home care services without wanting anything in exchange, e.g. because they feel morally obliged to take care of their relatives when the latter are in need (e.g., Norton and Van Houtven, 2006; Norton et al., 2013). If a remuneration exists, carers may expect a wealth transfer that remunerates them for their services. Often, this wealth transfer is given post mortem, 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 transfer inter vivos.

For family care assistants, formal wage contracts are seldom. In most cases, the arrangement is informal and the exchange of services and pay is part of the shadow economy. Theoretically, family care assistants could be remunerated through wealth transfers post mortem. However, such bequests to non-relatives are 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 – especially if they involve real estate and/or foreigners are the beneficiaries.

[23] The estimated numbers of family care assistants are taken from Kluzer et al. (2010).

If, however, they are executed openly, the tax wedge from the inheritance tax is substantial. Thus, most arrangements with family care assistants will take the form of informal wage (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 caregivers are subject to the inheritance tax in the end because LTC usually becomes necessary in the final phase of life. Second, wealth transfers to 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 relief, 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, family care assistants face a substantial tax wedge when receiving bequest. 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 relief for caregiving heirs would change the attractiveness of bequest contracts with family care assistants substantially.

5.4 Data and Hypotheses

5.4.1 Data: The GESIS Panel

In the current paper, we analyze citizens' policy preferences for a reform proposal for the German inheritance tax. It proposes to introduce a tax relief for recipients of wealth transfers who gave LTC to the person transferring the wealth. We address the question why do some citizens support the tax relief for caregivers while others oppose it? To answer these questions, we employ the GESIS Panel conducted by Leibniz Institute for social sciences in Mannheim, Germany (GESIS, 2016).[24] The survey covers individuals aged between 19 and 71 living in

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

Germany and is representative for the German population. 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 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.

5.4.2 Dependent Variable

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

In this paper, we are interested in those factors that differentiate subjects who oppose the tax relief (answer 1) from those who support the tax relief (i.e. tick answer 2 or 3) (see Figure. 5.1). The question what makes some respondents tick option 2 and others tick option 3 is an interesting research question of its own. It will, however, not be the focus of the current paper.

Figure 5.1: Question on policy preference regarding the tax relief for caregiving heirs

> "At present, a reform of the inheritance tax is discussed frequently. Some people demand an appreciation of home care by a tax relief. Others are against this proposition …. What do you think? Should there be an inheritance tax relief 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."

5.4.3 Independent Variables and Hypotheses

a) self-interest factors

The existing literature shows that policy preferences on taxation are driven by self-interest (see section 2). This suggests that citizens' support for a tax relief 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. This leads to our first hypothesis.

> ***H1 (self-interest):*** *Subjects who expect to make use of a tax relief are more likely to support it.*

First, we introduce two variables that capture the wealth transfers subjects expect to receive. We ask subjects whether they expect to receive an inheritance in the near future. The dummy variable *expect_inheritance* is 1 for all subjects who do (0 else). In addition, we asked subjects whether they or their parents own a house that has been in the hand of their family in earlier generations. The corresponding dummy variable *house_dynasty* takes on the value 1 for all those who own such a house (0 else). The higher the expected wealth transfer, the more likely subjects are to support the tax relief because it has the potential to reduce their tax burden. Second, 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 relief. Third, we account for the existence or absence of close relatives. Subjects without close relatives face 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 relief. *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). Finally, 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).[25] 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 relief. A dummy variable *female* captures subjects' sex.

b) personal experience and involvement in long-term care

We expect subjects' policy preferences regarding the tax relief for caregiving heirs to depend on their personal experience and involvement in LTC. The variable *gave_care_personally* takes on the value 1 for all subjects who state that they have been involved in providing LTC to a relative for a period of three months or longer (0 else). Here, caregiving includes occasional 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 relief for self-interest reasons. In addition, 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). Subjects who have provided LTC personally are aware of these problems and may like to see more support for caregivers and thus support the tax reliefs because it make it easier to organize support. Thus, our corresponding hypothesis reads:

> ***H2 (personal experience in LTC-giving):*** *Subjects who have been involved in long-term care are more likely to support the tax relief.*

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

According to the theory of sociotrophic voting, voters take a general perspective when assessing policy proposals: Policies that are viewed to improve overall welfare are supported while

[25] 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.

policies that reduce welfare are not supported (e.g. Paldam, 2004; Bischoff and Siemers, 2013). In the case of the tax relief for caregiving heirs, subjects are more likely to support the relief 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 relief 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. 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). Subjects who believe that the old generation lacks trust in the younger generation are more likely to support the tax relief.

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 *indirect_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. Therefore, they are expected to be more supportive of the tax relief.

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 relief. This hypothesis may be driven by sociotrophic 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_overestimation* 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 overestimation to increase support for the tax relief.

A substantial number of non-relatives providing home care come from other countries. In Germany, migrants from Eastern Europe are the largest group among them (Statistisches Bundesamt, 2016). The tax relief for caregiving heirs makes home care provision in Germany more attractive and is thus likely to increase the number of migrants in Germany. Subjects adhering to rightwing ideology oppose the immigration of foreigners and are thus more likely to oppose the tax relief. We control for this by introducing the variable rightwing. It takes on the value 1 for subjects who identifies themselves as right by ticking a value of 8 to 10 on a 10-point left-right scale with 0 indicating leftwing and 10 indicating rightwing (0 for all subjects ticking values between 0 and 7).

d) control variables

Finally, we introduce a number of control variables. The first control variable is the natural logarithm of subjects' age (*log_age*). We construct a dummy *high_education* 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 using the OECD-square-root-rule (OECD, 2008).[26]

5.5. Empirical Analysis

Among the 3509 respondents who answered our central question in figure 5.1, some 20 percent rejected the proposal to introduce a tax relief for caregiving heirs. Almost 44 percent support the tax relief for all caregivers regardless of their kinship status while 36 percent support the tax relief but want to see it restricted to caregiving relatives.

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 relief in general (question 1). In stage 2, those who support the tax relief in general decide whether it should be restricted to caregiving heirs (question 2). In this case, the two decisions should be analyzed consecutively. In the current paper, we are only interested in the answer to question 1. Nevertheless, we address this question in a multinomial regression to avoid errors resulting from a possible mis-specification. The results reported below are qualitatively identical to those we obtained when using a probit-approach bundling those who ticked answer 2 and 3 to one category.[27]

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

[27] The results are not reported here but are available upon requests.

Table 5.1 reports the descriptive statistics for all independent variables. The correlation matrix is reported in the appendix A.1. In the multinomial specification presented below, we use to answer 1 "No; there should not be a tax relief for caregiving heirs" as a reference category (see table 5.2). The baseline model includes all dependent variables described in section 4.3. Given that we had to exclude subjects reporting the lowest and highest income category and given missing answers on some questions, we finally end up with a sample of slightly more than 1.400 individuals.

Table 5.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
tax_relief_multi	3,509	116073	.7331047	0	2
expect_inheritance	3,239	.1213337	.3265651	0	1
house_dynasty	3,273	.2551176	.4359939	0	1
parents_alive	3,496	.7259725	.4460867	0	1
not_married	3,507	.4083262	.4915942	0	1
no_children	3,213	.2829132	.4504847	0	1
female	3,509	.5118267	.4999313	0	1
tax_overestimation	2,698	.5615271	.496292	0	1
old_fear_dependence	3,176	.8261965	.3790001	0	1
indirect_reciprocity	3,331	.2245572	.417353	0	1
rightwing	3,446	.0789321	.2696719	0	1
gave_care_personally	3,248	.2931034	.4552556	0	1
log_age	3,499	3.814792	.3380791	2.944439	4.26268
household_income	2,64	7.421853	.466686	5.991465	8.411833
high_education	3,505	.4313837	.4953401	0	1
middle_generation	3,509	.4545455	.4980006	0	1
old_generation	3,509	.246794	.4312072	0	1
neuroticism	3,324	5.723827	1.675842	2	10
extraversion	3,327	6.443943	1.77858	2	10
Openness_to_experience	3,340	6.774551	1.733454	2	10
agreeableness	3,322	6.204997	1.422853	2	10
conscientiousness	3,317	7.850769	1.440112	2	10
family_most_important	3,504	.3818493	.4859092	0	1
parents_in_same_house	3,496	.1264302	.3323811	0	1

Among the variables capturing subjects' self-interest (hypothesis H1) only *parents_alive* is significant with positive sign: Subjects whose parents are alive are more likely to support the unrestricted tax relief (answer 2). *Parents_alive* does not yield a significant coefficient for the

restricted type of a tax relief. Regarding personal experience and involvement in providing LTC, we find *gave_care_personally* to be significantly positive for the unrestricted tax relief as predicted in H2 and insignificant for the restricted tax relief. The variables covering subjects' general beliefs are partially significant: In line with our predictions, subjects who believe in norm of indirect reciprocity and/or overestimate the real tax burden from inheritance taxes are more likely to accept both types of tax relief (*indirect_reciprocity*; *tax_overestimation*). *Rightwing* is significantly negative for the unrestricted tax relief and insignificant for restricted tax relief. *High_education* is significant with a negative sign for both types of tax relief. All other variables are insignificant.

In model 2, we change the specification as follows: Depending on their age, subjects are likely to have distinctly different perspectives on the topic of inheritance and LTC. Thus, the impact of subjects' age may not be monotonic. 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. The two dummy variables are insignificant and all other variables perform like they do in model 1.

In model 3, we accommodate a recent trend in the related literature and account for the impact of personality traits on political attitudes. Recent studies show that subjects' personality traits predicts their self-placement on ideological scales as well as their voting behavior (e.g., Caprara et al., 2006; Gerber et al., 2010) even though the theoretical underpinning for these findings is still ad hoc (e.g., Gerber et al., 2011). The GESIS Panel uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions *neuroticism, openness_to_experience, agreeableness, conscientiousness, extraversion* on a 5-point Likert-like scale. Two questions are devoted to each personality trait and subjects' score is combined to an ordinal measure capturing the degree to which a certain trait is present within the subject. Following the standard procedure in the political psychology literature, we use the ordinal measure as exogenous variable (e.g., Müller and Schwieren, 2012).

Table 5.2: Multinomial probit model

VARIABLES	1	2	1	2	1	2
expect_inheritance	-0.118	0.265*	-0.119	0.263*	-0.0676	0.319*
	(0.161)	(0.159)	(0.161)	(0.159)	(0.167)	(0.165)
house_dynasty	0.0295	0.117	0.0341	0.125	0.0423	0.108
	(0.121)	(0.122)	(0.121)	(0.122)	(0.125)	(0.126)
parents_alive	0.432***	0.0569	0.461***	0.112	0.456***	0.0271
	(0.139)	(0.140)	(0.146)	(0.146)	(0.146)	(0.146)
not_married	0.0530	0.00630	0.0592	0.0190	0.127	0.0629
	(0.123)	(0.124)	(0.122)	(0.124)	(0.130)	(0.131)
no_children	-0.138	-0.172	-0.139	-0.164	-0.133	-0.208
	(0.137)	(0.139)	(0.135)	(0.137)	(0.143)	(0.146)
female	0.0725	-0.0881	0.0753	-0.0850	0.0516	-0.135
	(0.105)	(0.107)	(0.105)	(0.107)	(0.116)	(0.118)
tax_overestimation	0.433***	0.378***	0.438***	0.386***	0.477***	0.401***
	(0.108)	(0.110)	(0.108)	(0.110)	(0.113)	(0.114)
old_fear_dependence	0.218	-0.0193	0.215	-0.0200	0.201	-0.0755
	(0.133)	(0.132)	(0.133)	(0.133)	(0.140)	(0.139)
indirect_reciprocity	0.427***	0.312**	0.413***	0.298**	0.442***	0.326**
	(0.131)	(0.134)	(0.131)	(0.133)	(0.136)	(0.138)
rightwing	-0.398**	-0.291	-0.399**	-0.299	-0.446**	-0.333*
	(0.191)	(0.191)	(0.192)	(0.191)	(0.200)	(0.198)
gave_care_personally	0.352***	0.112	0.357***	0.116	0.346***	0.104
	(0.118)	(0.121)	(0.118)	(0.120)	(0.123)	(0.125)
log_age	0.0156	-0.0923			0.145	0.0647
	(0.230)	(0.233)			(0.243)	(0.247)
household_income	-0.163	-0.0966	-0.162	-0.0952	-0.179	-0.102
	(0.122)	(0.124)	(0.122)	(0.125)	(0.127)	(0.129)
high_education	-0.405***	-0.480***	-0.398***	-0.471***	-0.371***	-0.453***
	(0.112)	(0.114)	(0.113)	(0.114)	(0.118)	(0.119)
middle_generation			0.00460	-0.0511		
			(0.142)	(0.145)		
old_generation			0.0535	0.0169		
			(0.188)	(0.190)		
neuroticism					-0.00335	0.0260
					(0.0343)	(0.0349)
extraversion					0.0980***	0.0744**
					(0.0321)	(0.0327)
Openness_to_experience					-0.0606*	-0.0455
					(0.0326)	(0.0333)
agreeableness					-0.0175	0.00545
					(0.0377)	(0.0384)
conscientiousness					-0.0210	0.000659
					(0.0403)	(0.0413)
family_most_important					-0.112	-0.137
					(0.111)	(0.113)
parents_in_same_house					-0.0582	0.285
					(0.193)	(0.193)
Constant	1.065	1.490	1.070	1.085	0.725	0.636
	(1.302)	(1.325)	(0.950)	(0.965)	(1.429)	(1.451)
X^2-Stat	102.95***		102.99***		124.22***	
Observations	1,632		1,633		1,527	

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

In addition, we introduce two variables to account for subjects' view on the importance of the family (e.g., Arrondel and Masson, 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 relief. 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_in_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_important*. 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 – the two most popular things to evaluate – are less important (0 else). The variables capturing subjects' view on the importance of the family (*family_most_important* and *parents_in_same_house*) are insignificant. We find *extraversion* to increase the support for both types of tax relief. The performance of all other variables remains unchanged.

In table 5.3, we report only significant marginal effects for all predicted outcomes. As we have three answer options and we are interested in what makes people support the tax relief, we will refer to the marginal effects of first predicted outcome (Answer: "No; there should not be a tax relief for caregiving heirs"). The probability of supporting a tax relief is on average about 8 percentage points lower for subjects identify themselves as *rightwing*, about 9 percentage points lower for subjects, whose school education qualifies them to enter higher education (*high_education)* and 9 percentage points higher for subjects who overestimate the tax burden. The probability of supporting a tax relief is about 7 percentage points higher for subjects who adhere to the norm of indirect reciprocity (*indirect_reciprocity*) and 6 percentage points higher for subjects whose parents are living (*parents_alive*). The probability of voting for a tax relief is on average about 5 percentage points higher for those who stated that they were involved in providing LTC (*gave_care_personally*).

Table 5.3: Significant marginal effects

	MODEL 1		MODEL 2		MODEL3	
expect_inheritance	dy/dx	Std. Err.	dy/dx	Std. Err	dy/dx	Std. Err.
1	-0.016	0.029	-0.015	0.029	-0.029	0.029
2	-0.084**	0.036	-0.084**	0.036	-0.082**	0.036
3	0.100***	0.037	0.099***	0.037	0.111***	0.038
parents_alive						
1	-0.053*	0.028	-0.063**	0.029	-0.054*	0.028
2	0.115***	0.032	0.114***	0.033	0.118***	0.032
3	-0.062*	0.032	-0.051	0.034	-0.064*	0.033
tax_overestimation						
1	-0.086***	0.021	-0.088***	0.021	-0.095***	0.022
2	0.058**	0.026	0.058**	0.025	0.069***	0.026
3	0.028	0.025	0.029	0.025	0.026	0.026
old_fear_dependence						
1	-0.022	0.026	-0.021	0.026	-0.017	0.027
2	0.067**	0.031	0.066**	0.031	0.073**	0.032
3	-0.045	0.031	-0.045	0.031	-0.056*	0.032
indirect_reciprocity						
1	-0.073***	0.022	-0.071***	0.022	-0.076***	0.022
2	0.066**	0.030	0.065**	0.030	0.066**	0.031
3	0.007	0.029	0.006	0.029	0.009	0.030
rightwing						
1	0.079*	0.041	0.080*	0.041	0.090**	0.043
2	-0.065	0.045	-0.064	0.046	-0.072	0.047
3	-0.014	0.045	-0.016	0.045	-0.017	0.046
gave_care_personally						
1	-0.049**	0.021	-0.050**	0.021	-0.047**	0.022
2	0.083***	0.027	0.084***	0.027	0.075***	0.028
3	-0.034	0.026	-0.034	0.026	-0.029	0.027
high_education						
1	0.094***	0.022	0.092***	0.022	0.090***	0.023
2	-0.032	0.026	-0.031	0.026	-0.026	0.027
3	-0.062**	0.026	-0.061**	0.026	-0.065**	0.027
extraversion						
1					-0.018***	0.006
2					0.015**	0.007
3					0.003	0.007

We run a large number of sensitivity analyses to test the robustness of our results. These include the probit-regressions which combines both forms of tax relief to one category (see above) and a number of models with additional independent variables. Among other things, we account for

the place of birth and differentiate between respondents born inside and born outside German. 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. We also control for citizens' trust in the (federal) government. The variable *trust_in_ government* is 1 for those subjects who have much or very much trust in the German government (0 else). The lower the trust, the more reluctant citizens are to support high taxes (e.g., Bischoff and Kusa, 2016). None of these variables are fond to be significant, nor do they change the results reported above. Detailed information on the sensitivity analyses is provided in the supplementary material (available upon request).

5.6 Discussion

In the section above, we use data from the GESIS Panel to learn more about citizens' policy preferences for a tax relief for caregiving heirs in the German inheritance tax. Our results indicate that support for the general tax relief is in parts driven by monetary self-interest (hypothesis H1): Subjects whose parents are alive are more likely to support the tax relief. We also find support for hypothesis H2: Subjects who gave LTC personally are more supportive of the tax relief. The fact that this result is driven by a higher degree of acceptance for the unrestricted tax relief, we conclude that it does not point at self-interest. Instead, it suggests that subjects who gave LTC personally want to see it gratified by society or want to make it easier by families in which home care is needed to organize support by non-relatives. In addition, subjects are more likely to support this tax relief if they adhere to the social norm of indirect reciprocity. 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 relief. Somewhat surprisingly, we find no support for the notion that a high valuation of the family increases support for the tax relief. Subjects with a rightwing political orientation are more likely to oppose the tax relief – supposedly, because they oppose the increase in immigration to be expected if the tax relief is installed.

A number of 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 means 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 (e.g., Titus et al., 1979).

5.7 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 intrafamilial 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 relief for caregiving recipients of wealth transfers. This paper analyses the support for this tax relief using data from a representative survey among German citizens in 2014 and 2015. Some 80 percent of respondents support the relief for caregiving heirs. Our regressions show that self-interest drives subjects' policy preferences: Having alive parents increases support for the tax relief. We also find subjects' policy preferences to be driven by personal experience in LTC. This result supports the notion that their personal experience makes them more aware of the severe burden caregivers often bear.

Being more sensitive than others about this burden, they want to see it gratified and/or want to improve the opportunities to organize additional help from family care assistants. Surprisingly, 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 arguably benefit from the tax relief.

The survey results used in this paper show that about half of the subjects who support the tax relief for caregiving heirs want to see it restricted to relatives only. In other words, they do not want to see the tax wedge removed for non-relatives giving home care. This raises an interesting question for further research: Why do some subjects want to see non-relatives to play a greater role in home care provisions why others do not? It is beyond the scope of this paper to address this question. Thus, we leave it for future research.

6 Should there be a more Active Role of Family Care Assistants in Long-term Care Provision? – Survey Evidence on the View of German Citizens[28]

6.1 Introduction

Many industrialized countries witness a substantial increase in demand for long-term care (hereafter LTC) in the last decades. For Germany, the Federal Statistical Office counted 2.25 million citizens officially registered to require LTC in 2007 (e.g., Husmann, 2010). Organizing and funding LTC is a major challenge. The recent social science literature on filial responsibility in Europe shows that adults generally accept the responsibility of taking care of their parents when these are in need (e.g., Daatland et al., 2011). In a recent survey, almost 80 percent of the German participants agree that "Children should take responsibility for caring for their parents when parents are in need". At the same time, only about 23 percent of German respondents agreed that "Children should adjust their working lives to the needs of their parents" (see Herlofson et al., 2011). This shows that the social norm assigns adult children a crucial role when it comes to organizing LTC services for their parents while they do not generally feel obliged to provide these services personally.

In Germany, a place in a professional nursing home is difficult to get and very expensive. More importantly, surveys report that the German population strongly prefers to receive LTC services in the privacy of their own home (Eurobarometer, 2007). As a result, only one third of LTC recipients in Germany resides in a nursing home while the vast majority receives LTC services in the privacy of their own home (hereafter home care) (Geyer and Schulz, 2014). Professional nursing services often provide valuable help in these cases but there are many things left to do that these services do not provide. This especially true for patients suffering from dementia or Parkinson disease – a substantial and growing share of LTC-recipients (e.g., Alzheimer's

[28] This chapter is written in co-authorship with Ivo Bischoff (University of Kassel)

Association, 2016). Thus, adult children who respect their parents' preference and try to organize homecare for them essentially face two options: They can provide the home care services for their parents personally or they can find a so-called family care assistant, i.e. a non-relative who provides homecare to their parents and is paid for these services (see Kluzer et al., 2010).

Providing home care personally entails substantial (opportunity) costs, especially for adult children who have a job and have to reduce working hours to provide home care (e.g., Schmidt and Schneekloth, 2011). These costs do not emerge if family care assistants are employed. In this case, however, the care receivers have to pay for the home care services of others and can thus transfer less wealth to their offspring – either inter vivos or in the form of bequests. For the current decade alone, wealth transfers from the old generation to the younger generation in Germany are estimated to amount to € 4.6 billion (e.g., Sieweck, 2011). Thus, the impact of LTC-arrangements on expected wealth transfers may be a significant argument to provide home care personally. On the other hand, the sociological literature informs us that subjects who gave care to relatives often feel severely overburdened and find it difficult to organize external help or relief (e.g., McCarty et al., 2008, Schmidt and Schneekloth, 2011; Brenna and Di Novi 2016). Pedelabat (2012) estimates that approximately 100.000 female migrants work fulltime in providing LTC to German citizens in 2010. These add to an unknown number of legal residents working as family care assistants (e.g., Scheiwe and Krawietz, 2010).[29] Thus, the support of family care assistants is welcome in many cases.

Given that the demand for LTC is going to rise in the future, governments need to develop a political strategy to meet this demand and at the same time to limit the concomitant rise in taxes and social security contributions. Policies that pave the way for a more active role of family

[29] Most of the contracts between care receivers and non-relative home care providers are informal contracts and transactions take place in the shadow economy (e.g., Scheiwe and Krawietz, 2010).

care assistants are likely to be one element in this strategy. So far, we have very little systematic knowledge about citizens' view regarding a more active role of family care assistants: Are people willing to support a more prominent role of non-relatives in providing home care if this comes at the price of transferring substantial amounts of family-owned wealth to non-relatives? This is where our paper comes in: We analyze data from a representative survey among the German population. In this survey, participants are asked whether they support a reform of the German inheritance tax that allows tax-free wealth transfers to non-relatives in exchange for home care services (for details, see section 3). The reform proposed in the survey is not publicly debated in Germany and a number of important arguments stand against its implementation.[30] However, it is a highly suitable vehicle by which we can address the main question posed above because the survey question points subjects at the – as we believe – most sensitive consequence of a more active role of family care assistants. We will use this vehicle to identify important driving forces behind subjects' willingness to support a greater role of family care assistants at the price of re-directing wealth transfers to non-relatives.

Our main results can be summarized as follows: We hypothesize that monetary self-interest matters. In line with this hypothesis, we find subjects who expect an inheritance to be less likely to support a more active role of family care assistants while we find support to be higher among subjects who incur large costs of providing homecare personally because they have young children or live far away from their parents. Sociological studies lead us to hypothesize that subjects who gave LTC personally are more supportive of a more active role of family care assistants because they are aware of the severe burden LTC implies for care-giving family members and the difficulties to organize external support. Our results support this hypothesis. Finally, we find evidence for a clear line of conflict: On the one side, there are subjects with

[30] 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.

alive parents. They expect to be giving LTC before they – later in life – may receive. This group seems to appreciate family care assistants because they help them to fulfil their obligation to organize homecare for their parents without having to provide homecare personally. Thus, they are more likely to support a more active role of family care assistants. On the other side, there are subjects who primarily take the position of care receivers because their parents are dead. They are more skeptical about the role of family care assistants.

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 section 4, we present the data and essential hypotheses. Section 5 presents the empirical analysis. Section 6 discusses the results before section 7 concludes.

6.2 Review of Literature

Since their very beginning, human societies witnessed transfers of resources between generations. Today large amounts of intergenerational transfers are 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 Szydlik, 2004; Kopczuk and Lupton, 2007). The industrialized world will experience unprecented wealth transfers in the next decades. Wiktor (2010) estimate the average wealth transfers to exceed 4 trillion US-Dollars per decade in the next 50 years. In Germany alone, 4.6 billion € are to be transferred in the next decade (see Sieweck, 2011). Bequests from parents to their children and transfers to surviving spouses account the biggest share of all wealth transfers (e.g., Szydlik, 2004; Rowlingson and McKay, 2005). In the opposite direction, time, attention and, in particular, LTC are the main transfers. Measured by the opportunity costs of foregone wages when giving LITC, these transfers are also significant in size. In Germany, caregivers usually reduce their working hours when they start to provide LTC to a close relative and about 15 percent of them stop working entirely (e.g., Schmidt and

Schneekloth, 2011). The hours of work of caregivers are sensitive to the change in hours of care they provide. Using data from OECD countries, Colombo et al. (2011) shows that 1 percent increase in hours of home care by family members leads to more than 1 percent decrease of working hours.

One of the crucial question in the analysis of intergenerational transfers is the question regarding the motives behind them. A number of different motives are discussed in the literature. The exchange model of intergenerational transfers argues that monetary support from parents to children is given in exchange for transfers the parents themselves received from their children (e.g., Bernheim et al., 1985; Geurts et al., 2012, Lopez-Anuarbe, 2013). In this case, bequests are the "final payment" in a reciprocal relationship between generations. A number of studies show that this form of reciprocal exchange is empirically relevant (e.g., Angelini, 2007; Leopold et al., 2014). This supports the notion that children who give home care to their parents are often rewarded through higher wealth transfers.

Next to direct reciprocity, a number of other motives behind intergenerational transfers can be identified. First, altruistic motives are widely recognized to play an important role. In particular, transfers from the older to the younger generation are recognized to be driven by the parents' wish to support their offspring (e.g., Barro, 1974; Coall and Hertwig, 2010). Second, more recent studies support the notion of a widespread social norm of filial responsibility according to which adult children should take care of their elderly parents when the latter are in need for help (e.g., Rossi del Corso and Lanz, 2013; Herlofson et al., 2011). Arrondel and Masson (2001) argue that the social norm may result from the "demonstration effect". Accordingly, a certain generation of old people transfers wealth and time to the younger generation because they received the same support when they were young. Similarly, the young provide the old with attention and LTC because they observed their parents to do the same when the latter were young. Having observed intra-familial transfers among preceding generations establishes a

social norm that is passed on together with the wealth etc. (see also Brandt et al., 2009). Third, some authors argue that relatives may feel morally obliged to support their parents (e.g., Norton and Van Houtven, 2006; Norton et al., 2013). In the presence of altruistic motives, social norms or moral obligations, wealth transfers and/or home care are given without demanding a direct transfer in exchange. Nevertheless, children can expect some monetary benefit from providing home care personally compared to the situation where parents pay for LTC-service from others. The reason behind this nexus is that less funds are needed to pay for external LTC-services and thus parents are left with more wealth to transfer.

Summing up, the literature sketched above supports the existence of the trade-off sketched in the introduction: Adult children who provide homecare personally can expect higher wealth transfers – other things equal. Put differently, giving a more active role to family care assistants entails a loss in expected wealth transfers.

As the main survey question used in this paper asks for the respondents' policy preferences on taxation, we have to acknowledge the corresponding literature. There is a substantial body of literature on tax policy preferences but the number of studies that focus explicitly on wealth transfer taxation is limited.[31] The existing studies support the notion that self-interest matters: Subjects who expect to be burdened heavily by a tax tend to oppose it (e.g., Hammar et al., 2008; Page et al., 2013). A recent paper by Bischoff and Kusa (2016) is of particular relevance for the current analysis. Based on German survey data, they analyze the factors driving subjects' position on the question whether or not inherited wealth should be taxed. They show that subjects' policy preferences are shaped by material self-interest: Acceptance for inheritance taxation is higher among subjects whose parents are dead while it decreases in household

[31] 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 ong 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.

income. Women who are typically at the heart of intergenerational exchange relations are more likely to oppose inheritance taxation than men. On the other hand, neither subjects' personal experience in LTC provision nor their view on the role of families in society is found to matter. The existing studies also show that wealth transfer taxes are very unpopular (e.g., Birney et al., 2006; Hammar et al., 2008; Bischoff and Kusa, 2016). Thus, interfering with intra-familial wealth transfers is a politically sensitive issue.

6.3 Long-term Care and Wealth Transfer Taxation in Germany

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 on 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.

To assess the tax burden on wealth transfers given in exchange for home care, we need to look at the contractual arrangements between caregiver and care receiver. Let us look at home care provided by relatives first. We know little about the contractual arrangements. Formal contracts are likely to be rare but informal or implicit contracts are likely to exist. If a remuneration is stipulated, the caregiver may receive a regular pay for their services, much like a wage. In most cases, transfers are likely to take the form of wealth transfers that remunerate them for their

services. This wealth transfer is often given postmortem. 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. Under the existing tax schedule, the wealth transfers reaches the caregiving relative largely unshortened as long as the overall inheritance is moderate in size. In other words, the arrangement does not entail a tax wedge. In addition, even if the wealth transfer to caregiving relatives exceeds the limit of this exemption, the tax rate is low. Thus, for the large majority of families, wealth transfers received by caregiving relatives are not subject to a notable tax wedge.

In the case of family care assistants, 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 basis. The German legislation requires that 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. This implies a substantial tax wedge: Family care assistants receive less money than the care provider pays for the latter's services. In many cases, however, formal wage contracts do not exist and the exchange of services and pay is part of the shadow economy (e.g., Scheiwe and Krawietz, 2010). The option to "pay" the services in form of a wealth transfer may be a possible way to avoid the tax wedge. This form of contract would also resolve possible liquidity constraint among care receivers who possess real estate but little liquidity otherwise. Apart from the fact that it implies an illegal sham contract, this arrangement requires a high level of trust between contractors – especially if the promised wealth-transfer is given post mortem. More importantly, the current tax schedule implies a substantial tax wedge for any larger wealth transfers. Thus, offering caregivers part of the estate as final payment for their services is an attractive solution when the caregiver is a close relative but it is not in the case of family care assistants – even if the bequeather can credibly commit to this form of payment. A general tax relief that applies to all caregiving heirs regardless of kinship relations change this

substantially: family care assistants can be remunerated for home care services without having to incur a tax wedge from the inheritance tax and at the same time, a possible liquidity constraint among care receivers can be relaxed. This would increase the attractiveness employing family care assistants substantially. However, it would also imply that a larger share of family-owned wealth being transferred to non-relatives.

6.4 Data and Hypotheses

We employ data taken from the GESIS survey[32] conducted by Leibniz Institute for social sciences in Mannheim, Germany. It is a representative survey among German citizens containing numerous questions on intergenerational relations, LTC and inheritance taxation as well as a rich pool of additional variables.

6.4.1 Dependent Variable

The crucial survey question asks citizens to evaluate a reform proposal for the German inheritance tax. "What do you think: Should there be an inheritance tax relief for heirs who provided long-term care to the deceased person?" Subjects can choose between (1) No; (2) Yes, for all caregiving heirs; (3) Yes, but only for caregiving relatives.[33] Only 20 percent of the respondents oppose the tax relief for caregiving heirs (ticked answer 1) while the remaining 80 percent support it. Among the latter, about half support the tax relief for all caregiving persons (answer 2) while the half wants to see it restricted to caregiving relatives only (answer 3). In

32 Database-version: ZA5665. GESIS panel incremental codebook retrieved from www.gesis.org. . 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. The questions on intergenerational transfers, LTC and inheritance taxation are based on a proposal submitted by the authors. Bischoff and Kusa (2016) use the same data base (see section 2).

33 The option "Don't know" also existed. The question is introduced by the following text: "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 because home care is often paid for these days." In our sensitivity analysis, we tested whether the expectation that homecare is compensated financially changes subjects' answers to this question. However, the corresponding variable is insignificant and introducing it does not change the results reported below.

the analysis to follow, we focus on those who support the tax relief. Our main aim is to identify factors that make some subjects support the unrestricted tax reliefs while others oppose it.

6.4.2 Hypotheses

The choice between the restricted and the unrestricted tax relief captures the essential trade-off resulting for which we want to analyze citizens' views: Are people willing to support a more active role of family care assistants in providing home care if this comes at the price of redirecting substantial amounts of wealth transfers to non-relatives? Subjects who support the unrestricted tax relief also support a more active role for family care assistants while subjects opting for the restricted version do not. The upcoming analysis identifies factors that make respondents favor or oppose the general tax relief and thus a more active role of family care assistants.

The literature reviewed in section 2 suggests that material self-interest drives subjects' policy preferences. Thus, the question whether or not subjects support the generalized tax relief depends on whether or not they personally benefit from a more active role of family care assistants. When answering this question, people can take the perspectives of different agents in the process of home care-provision. To identify the different perspectives and agents, we create a very simple stylized case. Following the majority of cases in reality, all agents in the stylized case are female. Consider the relationship between an elderly lady (hereafter mother) and her sole daughter. The mother is wealthy enough to pay for a place in a nursing home but prefers to receive home care. Her daughter is working. If the daughter takes care of her mother, she has to reduce working hours and thus incur income losses. At the same time, she will receive larger wealth transfers than she would if her mother went to a nursing home or receive LTC from professional care workers at home. The lady next door (representing the family care assistants) offers to provide home care if she is paid adequately. Employing her is cheaper than choosing the nursing home and it respects the mother's preference for home care. In case of a

general tax relief, the mother and the lady next door can agree on a bequest contract that reduces the tax wedge substantially. This is not possible if the tax relief is restricted to family members. How do the ladies evaluate the possibility to avoid the tax wedge?

Let us take a look at the mother first. The general tax relief increases the chance to receive home care from the lady next door or reduces the price for the latter's services. In addition, it strengthens her bargaining position towards her daughter. On the other hand, the generalized tax relief takes moral pressure from her daughter to take care of the mother personally. Thus, the view depends on the question whether the mother wants her daughter to provide home care. If the answer is affirmative, she is expected to support the restricted tax relief. And she will support the generalized tax relief in case she is indifferent or even prefers to see the lady next door as care provider. This preference does not necessarily imply that the relationship to the daughter is bad. Instead, it may result from the fact that she wants to prevent her daughter from taking the heavy burden of home care provision (e.g., McCarty et al., 2008, Schmidt and Schneekloth, 2011).

Next, let us focus on the crucial role of the daughter. In the absence of altruistic motives, social norms, and moral obligations, she prefers the restricted tax relief because it strengthens her bargaining position towards her mother. Once we account for altruistic motives, social norms, and moral obligations, her preferences depend on whether she prefers to give home care personally or whether she prefers to see the lady next door take care of her mother. If she prefers to provide home care personally, she will continue to prefer the restricted tax relief because this increases the expected wealth transfer she gets in exchange. If, however, the daughter prefers not to give home care personally, she will support the unrestricted tax relief. This increases the chance of finding a family care assistant and reduces the price for the latter's services. Whether or not the daughter prefers to provide home care personally depends on the relationship between

the expected wealth transfers and the expected (opportunity) costs of home care provision. This leads to our first two hypotheses:

> ***H1a (expected benefits from providing home care personally):***
>
> *The higher the expected benefits from providing home care personally, for instance in the form of expected inheritances, the less likely adult children are to support the unrestricted tax relief.*
>
> ***H1b (expected benefits from providing home care personally):***
>
> *The higher the (opportunity) costs of providing home care personally, for instance in the form of foregone market income, the more likely adult children are to support the unrestricted tax relief.*

The stylized case created above used a number of simplifications.[34] First, it assumed that the mother commands sufficient wealth to incentivize home care by her daughter. Without sufficient wealth, the incentive for the daughter to provide home care is low but the incentive to organize home care remains. This is partly because the German government makes children liable for the costs of providing LTC for their parents (e.g., Dienel, 2007). In addition, the norm of filial responsibility or a feeling of moral obligation may make her feel responsible for organizing home care. Thus, hypotheses H1a and H1b still hold even if the parents are not wealthy.

Second, the stylized case above assumes that there is exactly one daughter who can provide home care. If there are more siblings, it becomes less clear who feels responsible for organizing LTC and there may be more than one child willing to provide LTC to the mother. More importantly, the incentives to provide home care personally depend on the mother's willingness to deviate from the rule to split wealth transfer equally between siblings and remunerate the

[34] For the lady next door, the generalized tax exemption opens new employment opportunities that do not emerge if under the restricted version.

caregiving child for his or her services. Empirical studies suggest that there is a strong tendency to split post-mortem transfers equally (e.g., Wilhelm, 1996; McGarry, 1999; Cox, 2003). However, unequal splits are frequently observed for inter vivos transfers (e.g., Light and McGarry, 2004; Leopold and Schneider, 2011; Norton et al., 2013). Thus, the existence of more than one child does not jeopardize the general logic leading to hypotheses H1a and H1b.

The sociological literature informs us that subjects who gave care to relatives often feel severely overburdened and find it difficult to organize external help or relief (e.g., McCarty et al., 2008, Schmidt and Schneekloth, 2011). This suggests that personal experience in LTC-provision increases subjects' support for the generalized tax relief. Thus, hypothesis H2 reads as follows:

> ***H2 (personal involvement in LTC):***
>
> *Citizens who gave home care personally are more likely to support the unrestricted tax relief.*

This hypothesis applies to adult children as well as to potential care recipients who are empathetic with their children.

6.4.3 Main Independent Variables

In this section, we describe the main independent variable used in the upcoming regressions and describe how they relate to the hypotheses derived above.

a) differentiating caregivers from care receivers

In the stylized case developed in section 4.2, the mother and her daughter are likely to differ in their support for the unrestricted tax relief. The essential fact that differentiates these two perspectives in the real world is the status of subjects' parents: Subjects whose parents are alive are likely to be in the situation of the daughter: They have to organize LTC before they are in the situation of the mother who needs LTC. Subjects whose parents are already dead are no longer in the situation of the daughter. Instead, their perspective is the one of care receivers

only. The variable *parents_dead* takes on the value 1 for all subjects whose parents are dead (0 else).

Leaving the narrow scope of the stylized case from section 4.2, we have to account for the fact that LTC is often organized or provided LTC by spouses or life partners. They may feel the same responsibility or obligation as adult children and their monetary self-interest in providing LTC personally may also be similar to the latter's. Put differently, subjects without spouse or life partner may take a perspective on the role of family care assistants that is similar to the perspective of subjects whose parents are dead. To capture their specific perspective, we introduce the variable *not_married*. It takes on the value 1 for the subjects who are neither married nor in civil union (0 else).

b) the special role of women

The empirical literature shows that women provide or organize by far the largest share of home LTC (e.g., Haberkern and Szydlik 2008; European Union, 2012; Adam and Mühling, 2014). 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 find themselves in both roles – caregiver (daughter) and care receiver (mother) – than men are. These facts suggest that women may have a different view on the unrestricted tax relief. A dummy variable *female* captures subjects' sex.

c) expected benefits from providing homecare personally (hypothesis H1a)

Hypothesis H1a states that the policy preferences of potential caregivers depend on the expected benefits from providing home care. The benefits are higher for subjects who may expect wealth transfers. We ask subjects whether they expect to receive an inheritance in the near future. The dummy variable *expect_inheritance* is 1 for all subjects who do (0 else). We expect the support for the unrestricted tax relief to be lower if subjects expect an inheritance.

d) expected benefits from providing homecare personally (hypothesis H1b)

The opportunity costs of providing long-term care depend on subjects' level of education (e.g., Blinkert and Klie, 2000). We construct a dummy *high_education* that takes on the value 1 for subjects whose school education qualifies them to enter higher education (0 else). A higher educational attainment is expected to raise the support for the unrestricted tax relief. In addition, we account for subjects' travelling distance to the home of their parents. The direct costs of providing home care to their parents increases in this travelling distance (e.g., Blinkert and Klie, 2000). Living far away from one's parents decreases the possibility of providing home care to them personally and therefore increases the probability that the parents have to depend on external caregivers. Nevertheless, these subjects may feel obliged to see their parents receiving LTC services in their own private home (e.g., Norton and Van Houtven, 2006). To capture this effect, we ask subjects for the distance between their own home and their parents' home and construct the variable *distance_to_parents_30_driving_minutes_or_more*. It takes on the value 1 if the distance between subjects and their parents is 30 driving minutes or more (0 else). We expect a large travel distance to raise the support for the unrestricted tax relief. Finally, we introduce the variable *children_under_16*. It is 1 if there are children aged under 16 years in the respondent's household (0 else). As these children require the attention of the respondent, the latter's capacity to provide home care is limited. Thus, we expect having young children to be associated with more support for the unrestricted tax relief.

e) personal experience and involvement in long-term care (hypothesis H2)

To test hypothesis H2, we introduce two variables that capture subjects' personal experience and involvement in long-term care. *gave_care_personally* 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 assistance while the main caregiving was in the hands of others, including commercial providers. The variable *care_in_family* 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). We expect positive values for these variables to be associated with more support for the unrestricted tax relief.

f) control variables

We introduce a number of control variables. The perspective on LTC may depend on subjects' age (e.g., Szydlik and Schupp, 2004; Wolff and Gittleman, 2014). We introduce the natural log of subject's age (*log_age*). From a potential care receivers' perspective, it is straightforward to argue that subjects who do not have close relatives are more likely to support the unrestricted tax relief. *no_children* takes on the value 1 for all subjects who do not have children (0 else) We also control for household income of subjects by calculating natural log of the equivalent household income *household_income* using the OECD-square-root-rule (OECD, 2008).[35] Empirical studies show that high-income households more frequently hire external care providers (e.g., Lippi Bruni and Ugolini, 2016). Finally, given that the relationship between caregiver and care receiver is a very intimate one, we control for family relations and the role of trust (e.g., Rhodes and Shaw, 1999). We introduce a dummy variable *family_ties_bad* that is 1 if the subject reports the relationship to his family to be bad (0 else). Next, we ask subjects whether they believe that old people refrain from giving inter vivos transfers because they fear to become dependent on their offspring. The variable *old_fear_dependence* takes on the value 1 for subjects who believe this (0 else). Finally, adult children may be more likely to accept family care assistants if their trust in other people in general is high. The variable *general_trust* is 1 for subjects who support the statement that people can generally be trusted (0 else).

[35] This variable is calculated using classified income data. We assumed that household's income equals the median value of the range they reported the income to be in. The highest category [6.000 Euro or more] and [5000 Euro and more for single-person households] was excluded. Households with five members or more are excluded for the same reason. The results do not change if data from official statistical data is used to estimate the equivalent household income in the excluded households.

6.5 Empirical analysis

The way the main survey question is posed (see section 4.1) suggests that subjects' decision process can be 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 relief in general (question 1). In stage 2, those who support the tax relief in general decide whether it should be restricted to family members (question 2). In this case, the possible interdependence between the two stages has to be tested using a Heckman-approach. We estimated a large number of specifications using this Heckman approach. Regardless of the specification, the regressions never indicated that the two steps are interdependent. Thus, we hereafter restrict our data to those who support the tax relief and estimate the choice between restricted and unrestricted tax relief using a probit approach. The results are presented below. Results of the multinomial regressions are reported in the supplementary material. They are qualitatively identical to the results reported here.

Our dependent variable *tax_exempt_general* is a binary variable. It is 1 for those subjects who ticked option (2), i.e. supported the tax relief for all caregiving heirs, and 0 for those who ticked option (3), i.e. wanted to see it restricted to caregiving relatives only. The variables described in section 4.3 are used to explain why some subjects support the unrestricted tax relief while others support the restricted one. Table 6.1 provides descriptive statistics. The degree of collinearity between our independent variables is generally low and even the correlation between *parents_dead* and *log_age* is not critical (see Appendix B.1).

Table 6.1: Descriptive statistics

	Variable	Obs	Mean	Std. Dev.	Min	Max
1	parents_dead	2,791	.267646	.4428113	0	1
2	female	2,803	.5205137	.4996681	0	1
3	expect_inheritance	2,574	.1200466	.3250792	0	1
4	distance_to_parents_30_driving_minutes_or_more	2,791	.2307417	.4213829	0	1
5	high_education	2,799	.410861	.492078	0	1
6	children_under_16	2,802	.2687366	.4433818	0	1
7	gave_care_personally	2,586	.2996906	.458211	0	1
8	care_in_family	2,598	.4160893	.4930036	0	1
9	not_married	2,801	.4148518	.4927844	0	1
10	no_children	2,556	.2777778	.4479909	0	1
11	log_age	2,794	3.808105	.3415319	2.944439	4.26268
12	household_income	2,134	7.404769	.4657853	5.991465	8.411833
13	family _ties_bad	2,788	.0390961	.1938585	0	1
14	old_fear_dependence	2,545	.832613	.3733944	0	1
15	general_trust	2,797	.6943153	.4607792	0	1
16	born_outside_germany	2,800	.0871429	.2820947	0	1
17	rightwing	2,750	.0730909	.260333	0	1
18	family_most_important	2,799	.3783494	.4850621	0	1
19	neuroticism	2,643	5.728339	1.652533	2	10
20	extraversion	2,645	6.485822	1.773771	2	10
21	openness to experience	2,657	6.75574	1.729274	2	10
22	agreeableness	2,645	6.200756	1.42837	2	10
23	conscientiousness	2,635	7.857685	1.444708	2	10

The regression results are presented in table 6.2. The baseline model in column 1 employs all independent variables described above and contains data on all participants of the GESIS-survey who answered all relevant questions in the survey. This leaves us with 1711 observations. In line with hypothesis H1a, subjects who expect an inheritance in the near future are less likely to support the unrestricted tax relief. We also find support for hypothesis H1b: subjects who live far away from their parents' home are more likely to support it (see *distance_to_parents_30_driving_minutes_or_more*). At the same time, subjects' level of education – used to capture the opportunity costs of home care provision – is insignificant. We find support for hypothesis H2: Subjects who gave LTC personally in the past are more supportive of the unrestricted relief. Among the control variables, *old_fear_dependence* is significantly positive.

Table 6.2: Basic regression models

VARIABLES	Coeff	ME	Coeff	ME	Coeff	ME	Coeff	ME
parents_dead	-0.261***	-0.1021***	-0.165**	-0.0648**	-0.292***	-0.114***	-0.211***	-0.0822***
	(0.0856)	(0.0334)	(0.0755)	(0.0296)	(0.0903)	(0.035)	(0.0799)	(0.0312)
female	0.0844	0.0329	0.134**	0.0525**	0.0978	0.0381	0.141**	0.0547**
	(0.0620)	(0.0242)	(0.0543)	(0.0212)	(0.0695)	(0.027)	(0.0609)	(0.0237)
expect_inheritance	-0.184*	-0.0717*	-0.169**	-0.066**	-0.217**	-0.0844**	-0.224***	-0.0871***
	(0.0947)	(0.0369)	(0.0818)	(0.032)	(0.0976)	(0.0379)	(0.0855)	(0.0332)
distance_to_parents_30_	0.211***	0.0818***	0.192***	0.0744***	0.195**	0.0755**	0.193***	0.0744***
driving_minutes_or_more	(0.0801)	(0.0308)	(0.0697)	(0.0268)	(0.0843)	(0.0324)	(0.0736)	(0.0282)
high_education	-0.0146	-0.0057	-0.0215	-0.0084	-0.00633	-0.0025	-0.00781	-0.003
	(0.0697)	(0.0271)	(0.0583)	(0.0227)	(0.0733)	(0.0285)	(0.0616)	(0.0239)
children_under_16	0.0887	0.0344	0.152**	0.0591**	0.105	0.0407	0.156**	0.0604**
	(0.0909)	(0.0352)	(0.0747)	(0.0288)	(0.0951)	(0.0367)	(0.0786)	(0.0301)
gave_care_personally	0.221***	0.0855***	0.193***	0.0748***	0.194**	0.075**	0.190***	0.0734***
	(0.0727)	(0.0278)	(0.0644)	(0.0248)	(0.0757)	(0.029)	(0.0674)	(0.0258)
care_in_family	-0.0334	-0.013	0.0111	0.0043	-0.0357	-0.0139	0.0178	0.0069
	(0.0655)	(0.0255)	(0.0574)	(0.0224)	(0.0686)	(0.0266)	(0.0603)	(0.0234)
not_married	0.0384	0.0149	0.0636	0.0248	0.0715	0.0278	0.0689	0.0267
	(0.0730)	(0.0284)	(0.0646)	(0.0252)	(0.0776)	(0.0301)	(0.0687)	(0.0266)
no_children	0.0826	0.0321	0.128	0.0498	0.0851	0.033	0.159*	0.0614*
	(0.0939)	(0.0364)	(0.0846)	(0.0327)	(0.0991)	(0.0383)	(0.0901)	(0.0345)
log_age	0.148	0.0576	0.123	0.0479	0.176	0.0683	0.178	0.069
	(0.144)	(0.0561)	(0.124)	(0.0483)	(0.153)	(0.0595)	(0.133)	(0.0513)
household_income	-0.0917	-0.0357			-0.0845	-0.0328		
	(0.0721)	(0.028)			(0.0759)	(0.0294)		
born_outside_germany					0.0766	0.0296	0.0498	0.0193
					(0.130)	(0.0499)	(0.112)	(0.0433)
rightwing					-0.0407	-0.0158	-0.0217	-0.0084
					(0.130)	(0.0505)	(0.112)	(0.0436)
family_most_important					0.0224	0.0087	-0.0237	-0.0092
					(0.0673)	(0.0261)	(0.0589)	(0.0229)
family_ties_bad	0.0443	0.0172	0.0709	0.0275	0.0169	0.0066	0.0249	0.0097
	(0.160)	(0.062)	(0.142)	(0.055)	(0.170)	(0.0661)	(0.152)	(0.0588)
old_fear_dependence	0.168**	0.0656**	0.148**	0.0579**	0.181**	0.0708**	0.187**	0.073**
	(0.0810)	(0.0317)	(0.0720)	(0.0282)	(0.0855)	(0.0334)	(0.0762)	(0.0297)
general_trust	0.0304	0.0118	0.0627	0.0245	0.00921	0.0036	0.0566	0.022
	(0.0690)	(0.0269)	(0.0598)	(0.0234)	(0.0740)	(0.0288)	(0.0639)	(0.0248)
neuroticism					-0.0142	-0.0055	-0.0164	-0.0064
					(0.0208)	(0.0081)	(0.0181)	(0.007)
extraversion					0.00469	0.0018	0.0182	0.0071
					(0.0197)	(0.0076)	(0.0171)	(0.0066)
openness to experience					-0.00400	-0.0016	-0.0111	-0.0043
					(0.0194)	(0.0075)	(0.0170)	(0.0066)
agreeableness					0.00508	0.002	0.00838	0.0033
					(0.0230)	(0.0089)	(0.0204)	(0.0079)
conscientiousness					0.00540	0.0021	0.0114	0.0044
					(0.0242)	(0.0094)	(0.0212)	(0.0082)
Constant	-0.0581		-0.739		-0.216		-1.057*	
	(0.779)		(0.502)		(0.860)		(0.579)	
pseudo-R^2	0.0187		0.0165		0.0205		0.0208	
X^2-Stat	44.24***		50.80***		44.20***		58.06***	
Observations	1,711		2,228		1,560		2,024	

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

Thus, believing that the old have little trust in the preceding generation increases the support for the unrestricted relief. Finally, we find subjects' support for the unrestricted tax relief to depend on the life status of their parents. Subjects whose parents are dead are less likely to support the unrestricted tax relief. At the same time, we do not find a difference between the answers of male and female respondents. Similarly, we find no difference between subjects who have a spouse or life partner and subjects who do not.

Due to data restrictions, we do not have estimates for equivalent household income for large households or households from the highest income categories. This reduces the sample by roughly 500 observations. In model 2, we drop *household_income*. Once income is dropped, we observe significant coefficients for both *female* and *children_under_16*. Female subjects and subjects from households with young children are more likely to support the unrestricted tax relief. The latter result is in line with hypothesis H1b.

In model 3, we introduce a number of additional variables. First, we construct the variable *family_most_important*. 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). Regarding the family to be very important may reduce support for the unrestricted tax relief. Second, strengthening the role of family care assistants is likely to cause an increase in the number of migrants working in Germany. We include two variables to capture subjects' possible view on this. The variable *born_outside_germany* is 1 for subjects born outside Germany (0 else) and the variable *rightwing* takes on the value 1 for subjects, who identifies themselves as right by ticking a value of 8 to 10 on a 10-point left-right scale (0 for all subjects ticking values between 0 and 7). Finally, we follow a recent trend among political scientists and analyze the impact of personality traits (e.g., Caprara et al., 2006; Gerber et al., 2010). The GESIS survey uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions *neuroticism, openness to experience,*

agreeableness, conscientiousness, extraversion on a 5-point Likert-like scale.[36] None of the new variables is significant while the performance of all other variables remains unchanged. In model 4, we re-estimate model 3 but exclude *household_income*. Like in model 2, *female* and *children_under_16* yield negative and significant coefficient estimators. Apart from that, no changes occur.

Looking at the marginal effect reveals that a number of variables have a sizeable influence on the probability of supporting the unrestricted tax relief. *Parents_dead* reveals the largest marginal effect of around -10 percentage points, followed by *gave_care_personally* and *distance_to_parents_30_driving_minutes_or_more* with almost 9 percentage points. *Expect_inheritance* reduces the probability of supporting the unrestricted tax relief by 7 percentage points while *old_fear_dependence* increases it by almost 7 percentage points. As we already mentioned, dropping *household_income* in model 2 female and *children_under_16* significant. The probability that subjects support the unrestricted tax relief is by 6 percentage points larger for those who have children aged under 16 years in their household and it is by 5 percentage points larger among women than among men. Apart from that, no sizeable changes occur. The same holds for model 3 and 4.

In section 4, we argue that adult children who are expected to organize LTC for their parents may have distinctly different views on the unrestricted tax relief than subjects who see themselves in the role of care-recipients only. So far, we accommodated this in a very crude way: We introduced a dummy variable that informs us whether or not the respondents' parents are still alive. This solution does not account for the possibility that the other factors differ in

[36] The GESIS survey uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions neuroticism, openness to experience, agreeableness, conscientiousness, extraversion on a 5-point Likert-like scale. Two questions are devoted to each personality trait and subjects' score is combined to an ordinal measure capturing the degree to which a certain trait is present within the subject. Following the standard procedure in the political psychology literature, we use the ordinal measure as exogenous variable (e.g., Müller and Schwieren, 2012).

their impact on subjects support for the restricted tax relief depending on whether or not their parents are still alive. To account for this possibility, we rerun the first two models in table 6.2 and include the interactions between *parents_dead* and all other independent variables. The results are reported in appendix B.2. The performance of the non-interacted variables is largely in line with their performance in table 6.2 while the interaction terms are largely insignificant. The marginal plots show that none of the interaction terms is significant (see Appendix B.3). Summing up: Our results indicate that subjects whose parents are dead are less likely to support the unrestricted tax relief. However, we do not find any evidence that there is a differential impact of the other factors depending on whether one's parents are alive or dead.

Women are more likely to be need LTC when they are old and the empirical picture from Germany and many other countries show that they are much active in organizing LTC and giving home care personally than men. The *female*-dummy used above does not account for the possibility that other factors differ in their impact on the support for the restricted tax relief between male and female respondents. To account for this possibility, we proceed like we did for *parents_dead*. The results are reported in appendix B.4 and B.5. Again, we find no indication that the subjects' sex moderates the impact of the other independent variable.

We ran numerous additional regression models as sensitivity analyses. In some models, we include additional independent variables capturing – among other things – subjects' health and employment status, their trust in government and their knowledge about the German inheritance tax schedule. None of these variables is significant, nor do they change the main results reported above. The sensitivity analyses also include the multinomial regressions mentioned in the beginning of this section. As reported above, the results support the main results reported here. Detailed information about the sensitivity analyses is provided in the supplementary material (available upon request).

6.6 Discussion

In the section above, we use data from the GESIS survey to learn more about citizens' policy preferences for a tax relief for caregiving heirs in the German inheritance tax. Some 80 percent of respondents support the relief. We focus on those subjects who supported the tax relief, and analyze their preferences regarding the second question: Should the tax relief be restricted to relatives? This survey question serves as a vehicle to learn more about citizens' view on politics that promote a more active role of family care assistants in LTC-provision in Germany. Our main question reads: Which factors make subjects' support or oppose the unrestricted tax relief and thus support or oppose a more active role of family care assistants?

In large parts of our analysis, we take the perspective of adult children who have to organize LTC for their parents in case they require it. We argue that they can choose between two options if they respect their parents' wish to receive LTC in their own private home: Either to provide homecare personally or they can find a family care assistant to provide homecare to their parents. A more active role for family care assistants implies that adult children find it easier to organize homecare for their parents without having to provide it personally. However, this relief comes at a price: The amount of wealth transfers flowing to non-relatives will increase. In line with our first hypothesis (H1a), we find support to be lower among subjects who expect an inheritance and are thus more likely to see family care assistants as potential competitors who reduce their bargaining power vis-à-vis their parents. And we also find support for hypothesis H1b according to which subjects' support for a more active role of family care assistants is higher among subjects who face high costs of providing homecare personally: Support for a more active role of family care assistants is higher if subjects have young children who require their attention or if they live far away from their parents. On the other hand, their level of education does not matter even though it determines the opportunity costs of providing homecare personally. Based on sociological literature, we argue that personal experience makes

subjects more aware of the heavy burden of homecare provision and the difficulty to organize external support. Thus, we hypothesize that subjects who have given LTC personally are supportive of an active role of family care assistants (hypothesis H2). Our results support this hypothesis.

Going beyond the perspective of adult children, we differentiate between subjects whose parents are dead and subjects whose parents are still alive. Subjects with alive parents are likely to be in the situation to give or organize LTC before they themselves receive LTC. Contrary to that, subjects whose parents are dead are likely to take the perspective of care-receivers only. We find support for a more active role of family care assistants to be lower among subjects whose parents are dead. This result identifies a clear line of conflict: On the one side, there are people who expect to be organizing or giving LTC before they – later in life – may receive LTC. The other side is represented by people who primarily take the position of care receivers. The former appreciate family care assistants because they help them fulfil their obligation to organize homecare for their parents without having to provide homecare personally. Thus, they support policies that pave a more active role of family care assistants. The latter are more skeptical about the role of family care assistants. This line of conflict provides a possible explanation why we do not find a stable and significant difference between women and men even though women are much more critical about inheritance taxation in general (see Bischoff and Kusa, 2016). Compared to men, women are more likely to give or organize but also to receive LTC. According to the above interpretation, the two competing perspectives neutralize.

The results presented above are based on a large number of observations from a representative survey in Germany. Adding variables or 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 are robust. Nevertheless, some limitations remain. Regarding the pool of independent variables, 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).

In a more general perspective, one can argue that the survey question we asked does not directly ask for the role of family care assistants. However, we are convinced that the link is sufficiently close. Furthermore, there is no simple way to ask the question of interest more directly because any other policy that helps pave the way for a more active role of family care assistants has numerous pitfalls. The strength of our question is that it points subject directly at the –we believe – politically most crucial price: A more active role of family care assistants comes at the price of allocating larger shares of family-owned wealth to non-relatives.

6.7 Conclusion

Many industrialized countries face a massive increase in the demand for LTC. This poses a major challenges for the governments: They have to make sure that the demand for LTC can be met and at the same time limit the concomitant rise in taxes and social security contributions. Family care assistants have the potential to play a vital role in this context. They can provide relief for the adult children who have to organize LTC for their parents. When family care assistants are employed, adult children do not have to provide LTC services personally but can still respect the preference of the elderly to receive LTC services in the privacy of their own home. However, the support of family care assistants comes at a price: Adult children who organize the support of family care assistants for their elderly parents receive less wealth transfers. From the perspective of society as a whole, a more active role of family care assistants brings substantial benefits but implies a systematic reallocation of family-owned wealth to non-relatives. This raises the question: Are people willing to support a more prominent role of non-

relatives in providing home care if this comes at the price of redirecting substantial amounts of wealth transfers to non-relatives?

In this paper, we use survey data from Germany to learn more about the factors that drive citizens' view on this trade-off. We find the support for a more active role of family care assistants to be driven by subjects' material self-interest and by their personal experience in LTC-provision: Subjects who gave LTC personally are more supportive of an active role of family care assistants. Most importantly, we find evidence for a clear line of conflict: there are citizens with alive parents. They expect to have to organize or provide LTC for their parents before being in the situation of needing LTC themselves. The other side is represented by citizens whose parents are dead and who thus mainly take the perspective of care receivers. Our study shows that the first group is much more supportive of an active role of family care assistants than the second group.

7 Should Intra-Familial Time Transfers be Compensated Financially?

7.1 Introduction

The industrialised world currently experiences substantial changes in structure of intergenerational transfers. Decreasing mortality and fertility rates result in declining number of children but increasing number of surviving generations (e.g., PFAW, 2001). At the same time, we observe an increasing number of people needing long-term care (hereafter: LTC). Moreover, dependent elderly people strongly prefer to be cared in their private homes (e.g., Eurobarometer, 2007). Substantial amount of care is provided by family members, fully or in part (e.g., Triantafillou et al., 2010). Informal care hereafter implies LTC provided by family members. Providing home care comes at considerable opportunity costs occurring due to income losses. This coincides with an increase in female labor market participation and a steadily increasing demand for more childcare facilities. Grandparental childcare remains the most popular alternative to formal childcare (e.g., Hank and Buber, 2009). With increasing life expectancy, we observe a growing number of physically and mentally fit grandparents, who are able to provide childcare and enable labour market participation of their children. (e.g., Bengtson and Lowenstein, 2003). In sum, we see that intra-familial time transfers (hereafter: ITT), i.e. practical help like babysitting, home care or help with paperwork, have not lost their relevance in modern society: they are still quantitatively meaningful in both directions. Finally, we currently observe an unprecedented accumulation of private wealth. Every year, portions of this wealth are passed on from one generation to the next. In Germany downward wealth transfers are estimated to amount to € 4.6 billion in the current decade (see Sieweck, 2011). This accumulation opens the possibility to pay for ITT.

Existing evidence suggests that there is some compensation for ITT (e.g., Norton et al., 2013; Groneck, 2016), but we have no evidence that it is generally accepted to compensate in society.

This paper investigates what the population thinks about applying the equity principle to transfers within the family. Moreover, it explores the factors that capture why some citizens accept the equity principle for ITT and others – not. We introduce two vignettes that ask whether citizens find it fair that ITT are compensated financially. An empirical data based on a representative GESIS Panel shows a discrepancy: almost 80 percent of the respondents state that intra-familial LTC should be compensated; only 38 percent state that grandparental childcare should be compensated. Some 53 percent of the respondents state that LTC should be compensated to a larger degree than grandparental childcare, while approx. 13 percent of the respondents state that grandparental childcare should be compensated to a larger degree than LTC. This discrepancy points at a substantial difference in the social acceptance of applying the equity principle depending on direction of ITT. Compensating for upward ITT i.e. from young to old generation, in form of informal LTC is more accepted socially than compensating for downward transfers, i.e. from old to young in form of grandparental childcare.

In this study, we relate respondents' personal characteristics to their answers regarding the acceptance to compensate for LTC and grandparental childcare thereby answering three questions:

1) What characterises individuals who accept the equity principle for intra-familial LTC?
2) What characterises individuals who accept the equity principle for grandparental childcare?
3) What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other?

To answer these questions, we conduct an empirical study using the data from the representative German Panel GESIS cited above. The categories we account for include family valuation, norms and values, respondents' sex, age, socio-economic position and personality traits. We

also control for a possible self-serving bias. At this point, the results have to be taken as descriptive while no causal interpretation should be attached to the reported regression coefficients.

Our main results can be summarized as follows: religiosity, respondents' age and socio-economic position, and self-serving bias variables, in particular, having children are found to shape subjects' social acceptance of applying the equity principle for informal LTC. Religiosity and respondents' age explain subjects' social acceptance of applying the equity principle for grandparental childcare. Values and norms, in particular religiosity and adherence to the norm of indirect reciprocity, respondents' age and socio-economic position, self-serving bias variables, in particular having children, and personality traits are found to explain different degrees of compensation for LTC and grandparental childcare. Overall, belonging to the old generation has the strongest effect.

While some of the results could be expected, we are puzzled to find some variables insignificant. We find that family valuation do not matter in any of the dimensions. Being a female by itself does not explain the differences, but has a moderating effect on other important variables. Including the interactions shows that women having children differ in their social acceptance from other subjects: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation.

The remaining paper is organized as follows: Section 2 provides the literature review on intergenerational transfers within the family. In section 3, we introduce data, methodological issues and relevant variables. Section 4 presents the empirical results. Section 5 provides discussion, current limitations, concluding remarks as well as recommendations for future research.

7.2 Intergenerational Transfers within the Family: Review of Literature

Before we turn to the theoretical literature, we sketch the empirical dimension of ITT and wealth transfers in Europe with focus on Germany. We begin with LTC that is the most politically relevant transfer from younger to older generation. Modern society currently experiences extreme population ageing (e.g., Kluzer et al., 2010). This effect is primarily driven by the large increase in the individual probability of needing LTC when elderly and the increase in the average duration dependent elderly people require LTC services (e.g., Colombo et al., 2011; Huber et al., 2012). In 2007, 2.25 million German citizens were officially registered to require LTC (e.g., Husmann, 2010). One third of them received LTC in nursing homes whereas two third were cared at home. The latter mainly receive home care without noteworthy support from professional care workers (approx. 1 million in 2007). Family members provide substantial amount of home care without getting a regular payment for their services. Using the data from seven European countries, Triantafillou et al. (2010) find that children and children-in-law represent the largest group of home caregivers (60%) followed by spouses (22%) Women are typical caregivers as well as care receivers of LTC. According to Bettio and Verashchagina, (2010), women form the majority of home caregivers with 61% of the total.

The number of employed informal caregivers increases steadily. In Germany, 38% of informal caregivers between 18 and 64 were employed in 1998; by 2010, the number has increased to 59% (e.g., Schmidt and Schneekloch, 2011). For employed informal caregivers, we observe a large reduction of working hours in their regular job (between 7 and 21%) and even complete quit from the labor market: between 3 and 18% of non-employed informal caregivers reported a caregiving as a reason of their decision to stop working (e.g., European Union, 2012). Colombo et al. (2011) found that 1% increase in hours of informal LTC leads to more than 1% decrease of working hours. Thus, LTC comes at considerable opportunity costs. More women

participating in the labor market reduce their working hours or completely quit work comparing to men (e.g., Bettio and Verashchagina, 2010).

While we observe shrinking support base for the LTC and elderly people, the situation is the opposite while considering grandparental childcare. Fertility decline results in unprecedented low numbers of children born in contemporary industrialized societies. At the same time, growing life expectancy enables longer shared lives of several generations (e.g., Bengtson and Lowenstein, 2003) and increase in female labor participation expands the demand for childcare. Empirical studies show that grandparents are the most common providers of informal childcare in Europe. However, the level of involvement in childcare strongly varies (e.g., Jappens & Van Bavel, 2012). Germany takes an average position with 32% of grandmothers and 25% of grandfathers regularly supervising their grandchildren. Coall and Hetwig (2010) observed a sample of German grandparents aged 55 to 69 years and found that they spent 12.8 hours each month caring for their grandchildren. Like in case of LTC, women are in heart of intergenerational relations.

Grandparents provide more childcare in the families where mothers work full-time as or have non-standard work schedules (e.g., Hank and Buber, 2009). The labor participation of working mothers is now higher than ever. This change is not accompanied by the simultaneous extension of formal childcare facilities, and grandparents fill this gap (e.g., Tobio et al., 2010). Posadas and Vidal-Fernandez (2012) find that that grandparental childcare increases maternal labor force participation by 15 percent on average. However, they show that this effect was mainly driven by families from socio-economically disadvantaged backgrounds. Grandparents provide more intensive help to their children who are single parents (e.g., Gray, 2005). Age matters, in fact in both directions. Young mothers are more likely to receive support from grandparents (e.g., Vandell et al., 2003) and younger grandparents are more likely to provide support to their children (e.g., Hank and Buber 2009).

Financial transfers provided by dependent elderly parents who have received informal LTC, can be understood as a payment and compensation for wages losses that occurs through caregiving (e.g., Tobio et al., 2010). Few studies[37] found that there is a positive relationship between amount of LTC provided by children and share of bequests received (e.g., Groneck, 2016). At the same time, Norton et al. (2013) argued that siblings who provided informal LTC are more likely to receive inter vivos transfers from their parents. 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 LTC.

Some studies show that grandparents receive monetary transfers in return for providing childcare. However, the numbers substantially differ: Presser (1989) finds that some 30% of US grandmothers receive some payment. According to Wheelock and Jones (2002: 457), monetary transfers are "very much the exception rather than the rule". Folk (1994) uses US data and showed that monetary transfers for childcare made by relatives are more often given for fulltime than part-time assistance and less often to grandparents than to other relatives providing childcare.

Boerner and Reinhardt (2003) find that the provision and the receipt of ITT are positively related: family members who received more family support at a given time point are also likely to provide more support to family members.[38] Jappel and van Bavel (2012) investigate the reciprocity in ITT on the European level. They find that the regions where grandparents are

[37] Empirical studies stating unequal amount of bequests are primarily based on the US data. USA has testamentary freedom In contrast, inheritance legislation restricts unequal division of bequests, and legal heirs can always claim 50 percent of their intestate share.

[38] However, this study lacks direct evidence of reciprocity. It is not clear whether family members who received more family support provide more support to family members in exchange or to other family members.

strongly involved in childcare outside the household are, at the same time, the regions where they receive more support from their offspring.

In sum, the literature provides some evidence that equity principle within the family plays a role, but it is far from universally accepted. Little is known about individual citizens' view on applying the equity principle within the family. The equity principle demands that the ratio between outcome (wealth, wage) to individual input (education, experience and effort) should be the same for everybody (e.g., Konow, 2003; Faravelli, 2007). We are used to apply equity principle in labor relations, i.e. work-salary correlation (e.g., Kahneman et al., 1986), but do people think that equity principle should be applied in intra-familial transfer relations?

There are different economic and sociological models of intra-familial transfers. Some of the models implicitly accept applying of the equity principle while others do not. The economic literature distinguishes between two classical models of intergenerational transfers: altruism (e.g., Barro, 1974; Coall and Hertwig, 2010) and exchange: direct or indirect (e.g., Bernheim et al., 1985). According to the exchange model, monetary support from parents to children is given in exchange for transfers the parents themselves received from their children (e.g., Cox and Rank, 1992; Lopez-Anuarbe, 2013). In line with this model, bequests can be interpreted as a "final payment" for the offspring' services in a reciprocal relationship between generations. Bernheim et al. (1985) and Cox (1987) argue that children provide ITT and attention to their parents in the hope of future inheritance. The exchange model of intergenerational transfers implies that the equity principle should be applied.

Some scholars argue that transfers may result from the "demonstration effect", i.e. transfers are made in expectation of similar behavior on behalf of the next generation. (e.g., Arrondel and Masson, 2001). According to this indirect reciprocity model, the offspring provide attention and LTC to the parents because they observed their parents to do the same when the latter were

young (e.g., Stark, 1995). Taking the downward perspective, parents transfer wealth and time to their offspring because they faced the same support when they were young. This model also implies that the equity principle should be applied, though the recipient is not necessary the one who gives ITT.

The altruistic model assumes that transfers from older to younger generation are motivated by the wish to support their offspring (e.g., Barro, 1974; Becker and Tomes, 1979). It assumes that lower-income recipients will be supplied with greater transfers: parents tend to equalize incomes of their children through transferring unequal amounts. The amount transferred and its division among the offspring (or other heirs) depend on offspring' incomes and not on whether the latter provided LTC or other services in exchange (Cox and Rank, 1992). Hence, altruistic model does not imply the equity principle.

Sociological studies support the notion of widespread social norms of family responsibilities (e.g., Herlofson et al., 2011, Daatland, 2011). Filial responsibility is a norm that considers duties and obligations of adult children towards their elderly parents (e.g., Rossi Del Corso and Lanz, 2013). Parental responsibility refers to parents' responsibility for their children. Herlofson et al. (2011) analyze family responsibility scales in nine European countries. They find that German citizens feel strongly obliged to take responsibility for caring for their parents when the latter are in need. However, they feel not obliged to adjust their working lives in order to provide intra-familial LTC. Answers to parental responsibility scale shows the similar pattern: parents feel themselves stronger obliged to help their adult children financially than to adjust their working lives in order to help their adult children. The models of social norms do not lead to any specific conclusion regarding the appliance of the equity principle.

Finally, intergenerational transfers can be also explained with evolutionary theory (e.g., Hamilton, 1964). According to the theory, downward parental and grandparental transfers

should dominate upward transfers like LTC, because the downward transfers are centrally important for offspring' survival and reproduction. Therefore, the compensation may be more likely for upward transfers, like LTC, than for downward transfers, like grandparental childcare.

7.3 Method, Data and Variables

In the current paper, we want to learn more about citizens' social acceptance of applying the equity principle in intra-familial transfer relations using survey method. The analysis is based on the representative GESIS Panel conducted by Leibniz Institute for social sciences in Mannheim, Germany (GESIS, 2016). The survey covers German citizens aged between 19 and 71. We successfully submitted a block of 29 questions on intergenerational relations, LTC, and inheritance taxation (see also Bischoff and Kusa, 2016). We also made use of a rich pool of additional variables provided by GESIS Panel.

7.3.1 Vignettes

To elicit citizens' social acceptance of applying the equity principle within the family we use two vignettes. A vignette is a tool that presents a hypothetical scenario where respondents are asked to state their decision. Given the scenarios, it places respondents in the position of impartial spectators. For example, in series of dictator studies, there are some treatments with the impartial third party spectators. Subjects get a fixed fee and allocate a sum between two other parties (e.g, Konow, 2000). As the impartial spectator's endowment is fixed, vignettes neutralize the impact of self-interest. The decision only represents social norms (e.g., Konow, 2003).

When describing a distributional problem, vignettes differ with respect to one aspect in order to avoid a danger of neutralizing factors. Researcher use standard formulations like "Individual A and individual B do the same job and work equally hard, but…", "Individual A and individual B are identical in terms of physical and mental abilities, but…". At the end, one differing factor

is placed. Here is one example from Schokkaert and Capeau (1991: 334): “Ann and Els are working in a flower shop. They do the same job and work equally hard. Ann has obtained a certificate of flower arrangement, while Els has not obtained such certificate. They both have a net monthly wage of 25.000 currency units. The shop owner decides to divide a monthly premium of 8.OOO currency units. What do you consider to be a fair distribution of that premium?” (see Schokkaert and Capeau (1991) and Konow (2003) for more examples). Respondents are asked to state whether they find the distribution fair or state the distribution they consider to be fair themselves. The answers can be elicited in qualitative as well in quantitative format. Usually, these hypothetical situations consider formal labor relations and only seldom touch ITT (e.g., Finch, 1987).

The vignette approach was found to be extremely useful for justice research (e.g., Kahneman et al. 1986). It is less common in economics than in psychological and sociological studies. However, the range of significant economic studies already applied vignettes (e.g., Faravelli, 2007; Schweizer and Gibson, 2007; Konow, 2009).

7.3.2 Dependent variables on two Main Vignettes

In this study, we use the subjects’ answers to two vignettes as dependent variables. The first vignette describes the hypothetical situation in which one daughter takes care of the grandmother and is put up with income losses. The text reads as follows:

“Consider a couple with two grown-up daughters (Andrea and Beate). The couple has assets of 100 000€ and would like to settle the distribution of these assets between their daughters. The daughters are equal with respect to marital status, number of children, income and health. The relationship between the couple and their daughters is good. Until recently, Andrea helped her parents to provide long-term care to her grandmother. For this reason, she only worked

part time for three years and waived parts of her wage whereas her parents continued to work as before. Her loss of wage amounts to 40 000 €."

The second vignette considers grandparental childcare and confronts respondents with the following hypothetical situation:

"Consider another couple with two grown up daughters (Gabi and Hannah). The couple has assets of 100 000 € and would like to settle the distribution of these assets between their daughters. The daughters are equal with respect to marital status, number of children, income and health. The relationship between the couple and their daughters is good. Both daughters support their parents to the same extent. Gabi lives with her family in the same city as her parents. Hannah lives with her family in a remote city. Both daughters resumed work soon after the birth of their children. For three years, the couple looked after Gabi's kids every day from 8:30 to 15:30. A child minder cared for the Hannah's kids. For this, Hannah paid 20 000€ in the last three years."

In both cases, subjects should answer a question: "How should the couple divide the 100 000 € among their daughters? Which distribution do you personally regard as fair?"

By answering this question, people state whether they accept that the equity principle should be applied for ITT. The variable *fair_care_compensate* depicts the degree to which respondents consider it fair to compensate Andrea for her time transfers and income losses, which arise due to the time, invested in informal LTC.

$$fair\_care\_compensate = \frac{proposed\_transfer\_to\_Andrea - 50000}{20000}$$

It is zero for all subjects stating an equal division of the 100 000 € as fair, i.e. they do not accept the equity principle for intra-familial LTC, and positive for all subjects who state some compensation as fair, i.e. accept the equity principle for intra-familial LTC. The variable

fair_care_compensate takes on the value 1 for those who suggest full compensation, i.e. 70000 € for Andrea and 30000 € for Beate. These subjects fully accept the equity principle for ITT. Table 7.1 reports the frequency of answers of the respondents.

Table 7.1: Compensation for LTC: Degree to which subjects consider it fair to compensate Andrea

fair_care_compensate	Freq.	Percent	Cum.
-1.5	1	0.03	0.03
-1	8	0.23	0.26
-.75	2	0.06	0.32
-.5	10	0.29	0.60
0	741	21.23	21.83
.15	2	0.06	21.88
.25	19	0.54	22.43
.3	2	0.06	22.49
.35	1	0.03	22.52
.45	1	0.03	22.54
.5	1,042	29.85	52.39
.75	129	25628	56.09
.8	1	0.03	56.12
.825	1	0.03	56.14
.85	1	0.03	56.17
1	1,178	33.74	89.92
1.1	1	0.03	89.95
1.25	76	43132	92.12
1.5	113	45352	95.36
2	155	16163	99.80
2.25	2	0.06	99.86
2.45	1	0.03	99.89
2.5	4	0.11	100.00
Total	3,491	100.00	

Almost 79% of all respondents propose unequal distribution in favor of Andrea (2729 out of 3470 respondents). Subjects who state an unequal distribution of bequest in favor of Andrea accept the exchange-model of intergenerational transfers as fair.

Analogously, we constructed the variable *fair_child_compensate* that depicts the degree to which respondents consider it fair to compensate grandparental childcare.

$$fair\_child\_compensate = \frac{50000 - proposed\_transfer\_to\_Gabi}{10000}$$

It is zero for all subjects proposing an equal division of the 100 000 €, i.e. they do not accept the equity principle for grandparental childcare, and positive for all subjects who propose some compensation to Hannah, i.e. they accept the equity principle for grandparental childcare, fully or partially. The variable *fair_child_compensate* takes on the value 1 for those who state full compensation (60 000 for Hannah and 40 000 for Gabi) as fair. Table 7.2 reports the degree to which subjects consider it fair to compensate grandparental childcare.

Table 7.2: Compensation for grandparental childcare: Degree to which subjects consider it fair to compensate Hannah

fair_child_compensate	Freq.	Percent	Cum.
-4	1	0.03	0.03
-3	7	0.21	0.24
-2.5	1	0.03	0.26
-2.2	1	0.03	0.29
-2	23	0.68	0.97
-1.5	1	0.03	1.00
-1	94	2.77	3.77
-.5	24	0.71	4.47
0	2,01	59.15	63.63
.2	2	0.06	63.68
.25	1	0.03	63.71
.5	131	3.86	67.57
.7	1	0.03	67.60
.75	1	0.03	67.63
.8	2	0.06	67.69
1	859	25.28	92.97
1.5	13	0.38	93.35
2	216	6.36	99.71
2.5	4	0.12	99.82
2.7	1	0.03	99.85
3	3	0.09	99.94
3.3205	1	0.03	99.97
4	1	0.03	100.00
Total	3,398	100.00	

Almost 62% of the respondents stated equal distribution between two daughters as fair comparing to 21% in LTC case. Only 38% percent of all respondents propose unequal sharing in favor of Hannah (1236 out of 3246).

7.3.3 Covariates

a) family valuation

We expect subjects' social acceptance of applying the equity principle within the family to be explained through their evaluation of family importance. Subjects who evaluate the family to be very important for them might be less likely to accept the equity principle for ITT. We construct the variable *family_most_important*. 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 – the two most popular things to evaluate – are less important (0 else).

b) norms and values

We expect subjects' social acceptance of applying the equity principle within the family to be explained through their social norms and values and constructed two variables to control for them. Arrondel and Masson (2001) argue that the pattern of intergenerational transfers observed in many societies emerges from a system of indirect reciprocity. Having observed intra-familial transfers in your own family creates a social norm to provide the same support to the next generation. Here the equity principle is applied, though indirect: subjects adhering to indirect reciprocity norm compensate received transfers with transfers done to the next generation. We capture respondents' adherence to indirect reciprocity as a social norm by asking them to tick the one of proposed statements that more closely represents their own view: 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. The variable *indirect_reciprocity* takes on the value 1 for subjects who tick the first statement (0 else). Subjects who adhere to the norm of indirect reciprocity might be more likely to state a compensation for ITT as fair.

Gans et al. (2010) found that religious people are more likely to provide informal LTC to their parents, which confirms the importance of religiosity. The variable *religious* takes on the value

1 for the subjects who evaluate religion as an important part of their lives (0 else). The question does not distinguish between religious confessions.

c) female

The typical informal caregiver as well as a typical provider of grandparental childcare is female (e.g., Haberkern and Szydlik 2008; European Union, 2012; Adam and Mühling; 2014), so females might be more likely to accept the equity principle within the family. At the same time, women are also more likely to be in need of LTC when they are old and need more support when having children. Summing up, women are at the heart of intergenerational exchange relations and their acceptance of applying the equity principle might deviate from the men's acceptance. We account for subjects' sex by introducing a *female*-dummy (1 for female respondents, 0 for males).

d) age

An approximate distinction between caregivers and care-receivers can be made by dividing subjects by their ages. Age increases the probability of requiring LTC. At the same time, the old generation is a typical provider of grandparental childcare. The young generation is typically not confronted with intra-familial LTC and childcare issues. The in-betweens are potential informal LTC providers. At the same time, they often need support in the form of childcare assistance. We classify individuals as "old" (born before 1955) and "in-betweens" (born between 1956 and 1975). The dummy variables *old_generation* and *middle_generation* capture these categories. In sensitivity analysis, we use the natural log of subject's age (*log_age*) as a covariate directly.

e) socio-economic position

We introduce variables that capture respondents' socio-economic position. The variable *high_education* takes on the value 1 for subjects whose school education qualifies them to enter

higher education (0 else). We account for *household_income* of subjects by calculating natural log of the equivalent household income using the OECD-square-root-rule (OECD, 2008)[39]. We construct the variable *regularly_employed* that controls for employment status. It takes on the value 1 if the subjects are full-time or part-time employed (0 else).

f) self-serving bias

Despite the fact that we place respondents in the position of impartial spectators, self-serving bias may distort subjects' social acceptance of applying the equity principle for ITT. For instance, Schokkaert and Capeau (1991) use vignette approach and indicate frequent acceptance of an unequal distribution in favor of one person if subjects can identify themselves with a person's current professional and income situation (see also Binmore, 1994).

We expect personal experience and involvement in LTC to explain social acceptance of applying the equity principle for informal LTC. If subjects are personally involved in caregiving, they might find it fair that intra-familial LTC needs to be appreciated and granted with larger bequest. To account for this, we ask subjects whether they were involved in informal LTC provision. The variable *gave_care_personally* is 1 for all subjects who stated they were involved in providing LTC to a family member for a period of three months or longer as a main caregiver. The variable is 0 for subjects who never provided LTC or only assisted occasionally while the main caregiving was in the hands of others (including professional nursing services).

If subjects have alive parents, they are potential caregivers and might have thought about organization of LTC. At the same time, parents may provide childcare for their grandchildren, so differences in social acceptance of applying the equity principle within the family might be

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

explained through the fact whether subjects have alive parents or not. The variable *parents_alive* takes on the value 1 for all subjects whose parents are living (0 else).

Having children may bias subjects' social acceptance of applying the equity principle for ITT as well. Subjects who tried to organize childcare might appreciate it more. Having children may also increase the probability to receive an informal care at home in old age. To account for this, we construct the dummy variable *children*. It takes on the value 1 for subjects with children (0 else).

Finally, subjects' position might be influenced through their evaluation of the quality of family ties. If subjects state family ties to be bad, they might be more likely to accept equity principle. The dummy variable *family_ties_bad* is 1 if subjects state these ties to be bad or very bad (0 else). We construct a variable that captures relative life satisfaction concerning subjects' family. The variable *family_relations_worse* takes on the value 1 for subjects stating that their life satisfaction is declined during the last 12 months (0 else).

g) personality traits

We follow a recent trend in the related literature and account for the relationship between personality traits and social acceptance of applying the equity principle within the family. The GESIS Panel uses the Big-Five-Inventory 10 proposed by Rammstedt et al. (2012) to characterize subjects' personality in the dimensions *neuroticism, openness_to_experience, agreeableness, conscientiousness* and *extraversion* on a 5-point Likert-like scale. Two questions are devoted to each personality trait and subjects' score is combined to an ordinal measure capturing the degree to which a certain trait is present within the subject. Following the standard procedure in the political psychology literature, we use the ordinal measure as exogenous variable (e.g., Müller and Schwieren, 2012).

Heckman (2012) summarizes the existing studies on personality and argues that conscientiousness – the tendency to be competent, hardworking, organized and achievement striving – is the most predictive Big Five personality trait. Conscientiousness is found to be just as important predictor as intelligence measured by an IQ test. Openness to experience is associated with positive responses to progress. Subjects scoring high on this trait might be more open for formal childcare facilities and nursing homes and do not support the view that everything should be handled within the family. Gerber et al. (2011) argue that agreeableness is associated with social conservatism: subjects scoring high on agreeableness may resist policies that challenge social norm, for example, development of nursing homes and formal childcare facilities. These subjects, opposite to subjects scoring high on openness to experience, might find that LTC and childcare should be handled within the family and equity should not be applied for ITT.

7.4 Empirical Analysis

The basic purpose of the empirical analysis is the exploration of the differences in social acceptance of applying the equity principle within the family based on the individual characteristics of the respondents, i.e. covariates described in the section 3.3. Note that our study is explorative rather than explanatory and our results are primarily descriptive (e.g., Fox and Bayat, 2007; Johnson and Christensen, 2010). Any causal interpretation should not be attached to the results.

7.4.1 Descriptives

In the section 3.2, we introduce two dependent variables *fair_care_compensate* and *fair_child_compensate.* We can observe a clear concentration of values at 0 (no compensation), 0.5 (50%-compensation) and 1 (full compensation). Therefore, we hereafter combine these values into categories in the following way: the new variables *fair_care_compensate_ordered* and

fair_child_compensate_ordered take on the value 1 for subjects who stated full compensation or more as fair, i.e. they fully accept the equity principle for ITT. The variables take on the value 0.5 for subjects who stated some compensation as fair, i.e. they partially accept the equity principle. Finally, they take on the value 0 for subjects who stated no compensation as fair i.e. they oppose the idea to apply the equity principle to intra-familial relations (see Table 7.3). The negative values were dropped out of the analysis.[40]

Table 7.3: Distribution of *fair_care_compensate_ordered* and *fair_child_compensate_ordered*

	fair_care_compensate_ordered			fair_child_compensate_ordered		
Value	Frequency	Percent	Cum.	Frequency	Percent	Cum.
0	741	21.35	21.35	2,010	61.92	61.92
0.5	1,199	34.55	55.91	138	4.25	66.17
1	1,530	44.09	100.00	1,098	33.83	100.00
Total	3,470	100.00		3,246	100.00	

Full descriptive statistics are provided in Table 7.4. The degree of collinearity between variables is generally low and even the correlation between *parents_alive* and *log_age* and correlation between *old_generation* and *regularly_employed* are not critical (see correlation matrix in Appendix C.1). We begin with the analysis of social acceptance of applying the equity principle for informal LTC only. Next, the grandparental childcare is considered. Finally, we investigate the acceptance of equity principle for two ITT within subjects. We provide an interpretation of the results directly in every section.

[40] We tested whether the sample of subjects who stated an unequal compensation in favour of Beate in the LTC vignette (respectively, Gabi in the childcare vignette) and the sample of subjects who stated no compensation as fair are statistically different. Analogously, we tested whether the sample of subjects who stated an unequal compensation in favour of Beate (Gabi) and the sample of subjects who stated a full compensation for Andrea (Hannah respectively) as fair are different. The results show similarity between sample of subjects who stated negative values and the sample of subjects who stated full compensation. The possible explanation might be that the subjects inverted the name of two daughters. However, as we do not know it for sure, we decided to drop these values from the analysis.

Table 7.4: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fair_care_compensate_ordered	3,470	.6136888	.3882461	0	1
fair_child_compensate_ordered	3,246	.3595194	.4687264	0	1
ltc_childcare_compensation	2,545	.4086444	.7084979	-1	1
family_most_important	3,541	.3888732	.4875633	0	1
religious	3,415	.2532943	.4349617	0	1
indirect_reciprocity	3,180	.2201258	.4143965	0	1
female	3,546	.5208686	.4996348	0	1
middle_generation	3,546	.4610829	.4985535	0	1
old_generation	3,546	.2340666	.4234737	0	1
log_age	3,536	3.805936	.3408093	2.944439	4.26268
high_education	3,542	.4466403	.4972148	0	1
household_income	2,644	7.424028	.470535	5.991465	8.411833
regular_employed	3,539	.6436847	.4789776	0	1
gave_care_personally	3,500	.2277143	.4194172	0	1
parents_alive	3,363	.7341659	.441842	0	1
no_children	3,464	.710739	.4534848	0	1
family_ties_bad	3,356	.0393325	.1944139	0	1
family_relations_worse	3,480	.1097701	.3126479	0	1
neuroticism	3,364	5.730975	1.673243	2	10
extraversion	3,361	6.445998	1.77352	2	10
openness_to_experience	3,381	6.785862	1.737079	2	10
agreeableness	3,363	6.231638	1.419729	2	10
conscientiousness	3,359	7.830902	1.445038	2	10

7.4.2 Compensation for Intra-familial LTC

In this part, we want to answer our first research question: What characterises individuals who accept the equity principle for intra-familial LTC. The regression results are presented in table 7.5. The baseline model in column 1 employs all covariates described in Section 3 except personality traits**.** The model uses data on all participants of the GESIS Panel who answered all relevant questions. We end up with 2148 observations. Among variables capturing social norms and values, *religious* is significant with positive sign. Belonging to the old generation has a significantly positive effect. Respondents' socio-economic position, in particular being qualified to enter higher education and having higher household income is significant with

positive sign. In the self-serving bias category, only *children* is significant with negative sign. Surprisingly, we found no effect of family valuation and sex.

Table 7.5: Compensation for informal LTC: ordered probit model

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
family_most_important	-0.0204	-0.0124	-0.0248	-0.0215	-0.0225	-0.0247
	(0.0513)	(0.0532)	(0.0513)	(0.0514)	(0.0514)	(0.0514)
indirect_reciprocity	0.102	0.0983	0.105*	0.0994	0.100	0.0975
	(0.0622)	(0.0638)	(0.0622)	(0.0622)	(0.0622)	(0.0622)
religious	0.137**	0.118*	0.135**	0.141**	0.136**	0.139**
	(0.0589)	(0.0609)	(0.0590)	(0.0590)	(0.0590)	(0.0590)
female	-0.0288	-0.0236	-0.0280	0.171*	-0.297***	-0.106*
	(0.0505)	(0.0551)	(0.0505)	(0.0922)	(0.0958)	(0.0587)
middle_generation	0.103	0.110		0.101	0.0944	0.101
	(0.0679)	(0.0706)		(0.0679)	(0.0680)	(0.0679)
old_generation	0.233**	0.251***		0.219**	0.244***	0.0943
	(0.0938)	(0.0973)		(0.0939)	(0.0940)	(0.108)
high_education	0.212***	0.202***	0.215***	0.214***	0.210***	0.217***
	(0.0543)	(0.0562)	(0.0543)	(0.0543)	(0.0543)	(0.0543)
household_income	0.136**	0.132**	0.135**	0.137**	0.140**	0.136**
	(0.0596)	(0.0611)	(0.0597)	(0.0596)	(0.0596)	(0.0596)
regularly_employed	-0.0590	-0.0323	-0.0869	-0.0665	-0.0443	-0.0609
	(0.0644)	(0.0664)	(0.0588)	(0.0645)	(0.0646)	(0.0644)
gave_care_personally	0.0217	0.0202	0.0200	0.0176	0.00281	0.0219
	(0.0603)	(0.0621)	(0.0603)	(0.0603)	(0.0606)	(0.0603)
parents_alive	0.0779	0.0722	0.0680	0.213**	0.0784	0.0894
	(0.0691)	(0.0711)	(0.0670)	(0.0865)	(0.0691)	(0.0692)
children	-0.213***	-0.204***	-0.235***	-0.212***	-0.404***	-0.207***
	(0.0623)	(0.0646)	(0.0648)	(0.0623)	(0.0854)	(0.0623)
family_ties_bad	-0.116	-0.127	-0.126	-0.108	-0.108	-0.101
	(0.133)	(0.135)	(0.132)	(0.133)	(0.133)	(0.133)
family_relations_worse	0.00460	-0.00305	0.00308	9.81e-05	0.00469	-0.00128
	(0.0803)	(0.0840)	(0.0801)	(0.0803)	(0.0803)	(0.0803)
neuroticism		0.0118				
		(0.0161)				
extraversion		-0.00911				
		(0.0151)				
openness_to_experience		0.0188				
		(0.0154)				
agreeableness		0.0136				
		(0.0180)				
conscientiousness		-0.0206				

		(0.0190)				
log_age			0.267**			
			(0.109)			
parents_alive#female				-0.283***		
				(0.109)		
children#female					0.370***	
					(0.112)	
old_generation#female						0.291***
						(0.112)
Constant cut1	0.257	0.307	1.120**	0.343	0.143	0.222
	(0.429)	(0.500)	(0.545)	(0.431)	(0.431)	(0.430)
Constant cut2	1.235***	1.286**	2.097***	1.323***	1.125***	1.202***
	(0.430)	(0.501)	(0.546)	(0.431)	(0.431)	(0.430)
pseudo-R^2	0.0124	0.0131	0.0124	0.0139	0.0149	0.0139
$\chi^2 - Stat$	56.08***	55.57***	55.97***	62.83***	66.98***	62.80***
Observations	2,148	2,022	2,147	2,148	2,148	2,148

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

In model 2, we add Big Five personality traits. None of the Big Five variables is significant while the performance of all other variables remains unchanged, only variable *religious* drops to be significant at 10% level only. In model 3, we re-estimate model 1 but replace *middle_generation* and *old_generation* variables with *log_age*. *Log_age* is significant with positive sign, while the performance of all other variables remains stable.

In models 4, 5 and 6, we introduce the interaction of *parents_alive, children* and *old_generation* variables with *female* respectively. The rationale behind these models is the following: women are much more heavily involved in intra-familial exchange relations. They are more likely to require LTC when they are old and are more likely to organize and provide home care to family members than men are. We found no significant effect of sex, however, the female-dummy alone does not account for the possibility that, between males and females, the impact of other covariates can differ. In model 4, the interaction term of *parents_alive* and *female* is significant with negative sign while the performance of all other variables remains unchanged. In model 5, variable *children* remains significant and negative, however, the interaction term of *female* and *children* is significant and positive. Moreover, *female* turns to be significant and negative.

Hence, women having children differ in their social acceptance of applying the equity principle for ITT from other subjects: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation. Apart from that, no other changes occur. In model 6, the interaction term of *old_generation* and *female* is significant with positive sign while the performance of all other variables remains unchanged.[41] Marginsplots of the interaction terms with *female* can be found in the Appendix C.2.

Table 7.6. Compensation for informal LTC: significant marginal effects using baseline model

Variable		dy/dx	Std. Err.
religious			
	1	-.0368**	(.0153)
	2	-.0169**	(.0079)
	3	.0537**	(.0231)
children			
	1	.0564***	(.0158)
	2	.0270***	(.0088)
	3	-.0834***	(.0244)
old_generation			
	1	-.0612***	(.0235)
	2	-.0294**	(.0129)
	3	.0906**	(.0362)
high_education			
	1	-.0577***	(.0146)
	2	-.0252***	(.0069)
	3	.0829***	(.0213)
household_income			
	1	-.0376**	(.0164)
	2	-.0154**	(.0068)
	3	.0531**	(.0231)

*** p<0.01, ** p<0.05, * p<0.1

In table 7.6, we report only the significant marginal effects for all predicted outcomes using the baseline model. A number of variables have a sizeable influence on the probability of social

[41] We also tested the interaction of *gave_care_personally* and *middle_generation* with *female* respectively. The interaction terms do not generate significant coefficient estimators, nor do the corresponding plots show significant marginal effects, while the performance of all other variables remains stable. These results are not reported here and available upon request.

acceptance of applying the equity principle for informal LTC. The estimation results particularly imply that being religious, having children, belonging to the old generation, being qualified to enter higher education and having higher household income have a significant effect on the choice of full compensation as fair. Having *children* leads to an approximately estimated decrease of the choice probability for full compensation by 8 percentage points. Belonging to the old generation (*old_generation*) leads to increase of the choice probability for full compensation by 9 percentage points, being qualified to enter higher education (*high_education*) - by 8 percentage points and being *religious* - by 5 percentage points. Jumping from one household income class to the next (average distance 500 Euro) increases the choice probability for full compensation by 4 percentage points.

In sum, values and norms (being religious), age (belonging to the old generation), socio-economic position (household income and high education variables) and self-serving bias variables (having children) are found to shape social acceptance of applying the equity principle for informal LTC. Surprisingly, the variable religious is significant with positive sign: religious people are more likely to support a compensation. Belonging to the old generation has a positive effect on accepting the full compensation for LTC. Subjects with higher education are more likely to support the compensation, possibly because of higher opportunity costs. Subjects having children are less likely to support a compensation. We found no effect of family valuation. Being female has no direct effect, but the interactions between female variable and self-serving bias variables are found to be significant. They show that being a female is an important factor in shaping of social acceptance of applying the equity principle for informal LTC. The most interesting result occurs, when we interact the variables *female* and having *children*. For males, having children is found to have negative effect on assessing the compensation for LTC as fair; for females, however, having children has a positive effect. Females without children are less likely support a compensation for informal LTC. Therefore,

having offspring plays a crucial role in explaining social acceptance of applying the equity principle within the family and causes different reactions for males and females.

7.4.3 Compensation for grandparental childcare

In this part, we want to answer our second research question: What characterises individuals who accept the equity principle for grandparental childcare. The regression results are presented in table 7.7. As in the section 4.2, the baseline model employs all covariates described in Section 3 except personality traits and variables relevant only for LTC vignette. The model uses data on all participants of the GESIS Panel who answered all relevant questions. This leaves us with 2038 observations. As in the LTC vignette, being *religious* and belonging to the *old_generation* are found to be significant with positive sign. Moreover, belonging to the *middle_generation* has a significantly positive effect. Having children that might need childcare does not have a significant effect. And again, we found no effect of family valuation and sex.

Table 7.7: Compensation for grandparental childcare: ordered probit model

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
family_most_important	0.0728	0.0869	0.0595	0.0726	0.0709	0.0712
	(0.0578)	(0.0599)	(0.0578)	(0.0578)	(0.0579)	(0.0579)
indirect_reciprocity	0.133*	0.101	0.139**	0.131*	0.132*	0.131*
	(0.0692)	(0.0712)	(0.0692)	(0.0692)	(0.0692)	(0.0692)
religious	0.138**	0.123*	0.126*	0.140**	0.138**	0.139**
	(0.0662)	(0.0685)	(0.0663)	(0.0662)	(0.0662)	(0.0662)
female	0.0421	0.0109	0.0469	0.146	-0.0799	0.0138
	(0.0571)	(0.0620)	(0.0571)	(0.104)	(0.107)	(0.0669)
middle_generation	0.176**	0.167**		0.174**	0.170**	0.175**
	(0.0774)	(0.0805)		(0.0774)	(0.0775)	(0.0774)
old_generation	0.484***	0.457***		0.477***	0.487***	0.435***
	(0.105)	(0.109)		(0.106)	(0.106)	(0.122)
high_education	-0.0145	-0.0180	0.00261	-0.0134	-0.0146	-0.0121
	(0.0611)	(0.0631)	(0.0612)	(0.0611)	(0.0611)	(0.0611)
household_income	-0.0241	-0.0491	-0.0318	-0.0245	-0.0251	-0.0253
	(0.0674)	(0.0688)	(0.0677)	(0.0674)	(0.0674)	(0.0674)
regularly_employed	-0.0176	0.00232	-0.0932	-0.0218	-0.0112	-0.0175
	(0.0731)	(0.0754)	(0.0669)	(0.0732)	(0.0732)	(0.0731)
parents_alive	0.0789	0.0768	0.0605	0.151	0.0803	0.0826
	(0.0781)	(0.0801)	(0.0755)	(0.0989)	(0.0781)	(0.0782)

children	-0.135*	-0.107	-0.189**	-0.135*	-0.220**	-0.133*
	(0.0707)	(0.0732)	(0.0733)	(0.0707)	(0.0944)	(0.0707)
family_ties_bad	-0.0561	-0.0555	-0.0896	-0.0497	-0.0498	-0.0498
	(0.149)	(0.153)	(0.149)	(0.149)	(0.149)	(0.149)
family_relations_worse	0.0261	0.0463	0.0186	0.0262	0.0279	0.0258
	(0.0905)	(0.0943)	(0.0901)	(0.0904)	(0.0905)	(0.0905)
neuroticism		0.0179				
		(0.0182)				
extraversion		-0.0225				
		(0.0172)				
openness_to_experience		0.0292*				
		(0.0174)				
agreeableness		0.00863				
		(0.0206)				
conscientiousness		0.0323				
		(0.0217)				
log_age			0.569***			
			(0.123)			
parents_alive#female				-0.148		
				(0.124)		
children#female					0.169	
					(0.126)	
old_generation#female						0.102
						(0.126)
Constant cut1	0.380	0.657	2.199***	0.423	0.314	0.361
	(0.485)	(0.561)	(0.612)	(0.486)	(0.487)	(0.485)
Constant cut2	0.500	0.781	2.319***	0.543	0.434	0.481
	(0.485)	(0.561)	(0.612)	(0.486)	(0.487)	(0.485)
pseudo-R^2	0.0129	0.0143	0.0128	0.0134	0.0135	0.0131
$\chi^2 - Stat$	42.33***	44.37***	41.84***	43.76***	44.14***	42.99***
Observations	2,038	1,921	2,037	2,038	2,038	2,038

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

In model 2, we add Big Five personality traits. None of the Big Five variables is significant while the performance of all other variables remains unchanged. Like in the section 4.2, the variable *religious* turns to be significant at 10%-level (not 5%). In model 3, we re-estimate model 1 but replaced *middle_generation* and *old_generation* variables with *log_age*. *Log_age* is significant with positive sign, variable *children* turns to be significant at 5% level and variable *religious* turns to be significant at 10%-level, while the performance of all other variables remains stable.

In models 4, 5 and 6, we introduce the interaction of *parents_alive, children* and *old_generation* variables with *female* respectively. The rationale behind these models is similar to the one in 4.2: women are much more heavily involved in grandparental childcare. They are more likely to organize and provide childcare than men are. We found no significant effect of sex, and test for the possibility that, between males and females, other covariates can differ and, therefore, explain differences in social acceptance of applying the equity principle for grandparental childcare. The interaction terms do not generate significant coefficient estimators, nor do the corresponding plots show significant marginal effects (see Appendix C.3.). After including the interaction of *children* and *female* in model 5, variable *children* turns to be significant at 5% and negative. It tells us that men having children are less likely to support the compensation for grandparental childcare. Apart from that, no other changes occur.

Table 7.8. Compensation for grandparental childcare: significant marginal effects using baseline model

Variable	dy/dx	Std. Err.
religious		
1	-.0526**	.0254
2	.0019**	.0009
3	.0507**	.0245
middle_generation		
1	-.0656**	.0286
2	.0026**	.0011
3	.0630**	.0275
old_generation		
1	-.1863***	.0400
2	.0052***	.0009
3	.1811***	.0395

*** p<0.01, ** p<0.05, * p<0.1

In table 7.8, we report only the significant marginal effects for all predicted outcomes using the baseline model. The estimation results particularly imply that being religious and belonging to the middle and the old generation have a negative effect on the acceptance of equal distribution between two daughters (predicted outcome 1). Belonging to the *old_generation* leads to an approximately estimated decrease of the choice probability for equal distribution by 19

percentage points, belonging to the *middle_generation* – by 7 percentage points and being *religious* - by 5 percentage points.

In sum, values and norms (being religious) and age-related variables (belonging to the middle and old generation) are found to shape social acceptance of applying the equity principle for grandparental childcare. Like in the Section 4.2, belonging to the old generation has the strongest positive effect. It might be explained through changing perspective: Older subjects are potential grandparental caregivers. Therefore, they might be more likely to support the compensation for grandparental childcare. Surprisingly, subjects belonging to middle generation - adult children that might need support by childcare assistance - are also more likely to support a compensation. Again, religious subjects are more likely to accept the equity principle for ITT. Family valuation do not matter. Moreover, we found no effect of being female even if we include interaction terms.

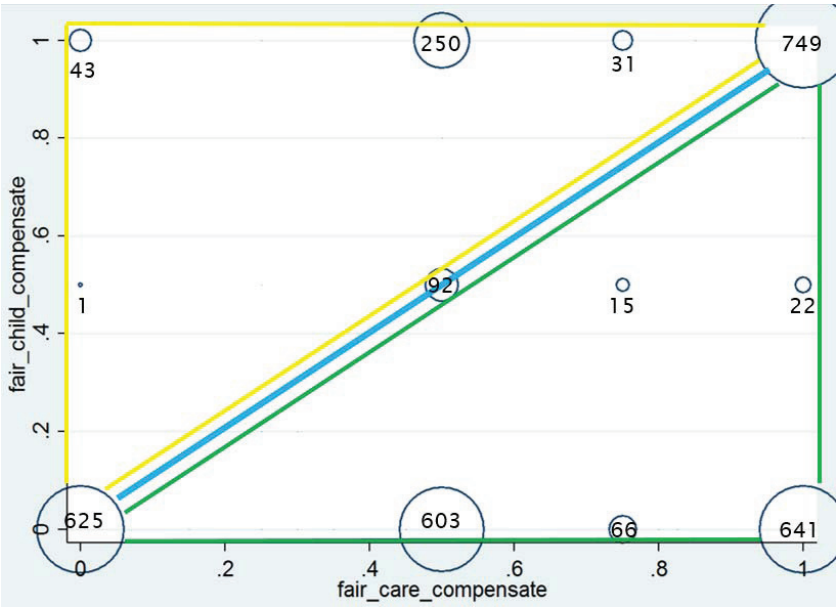
7.4.4 Relationship between compensation for intra-familial LTC and compensation for grandparental childcare

Until now, we analyzed social acceptance of applying the equity principle for intra-familial LTC and grandparental childcare separately. Here we come to the question (3): What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other, i.e. they "discriminate" against one ITT, while others support that it is applied equally to both ITT. We present the answers of the respondent using Cartesian coordinate system, i.e. we plot points along a grid where the X-axis represents *fair_care_compensate* and the Y-axis represents a *fair_child_compensate* (see Figure 7.1). The circles show the proportion of respondents who selected the distribution (X,Y).

Full compensation for informal LTC and grandparental childcare is accepted by 749 subjects (see (1, 1)-circle). No compensation in both cases is accepted by 625 subjects (see (0, 0)-circle).

The diagonal represents subjects who do not "discriminate" against one time transfer, i.e. they state the same degree of compensation for LTC and childcare. The green triangle includes subjects who consider applying the equity principle to be more acceptable for intra-familial LTC than for grandparental childcare For example, 641 subjects find that informal LTC should be fully compensated and childcare should not be compensated at all. The yellow triangle shows subjects who find that applying the equity principle is more acceptable for grandparental childcare than for intra-familial LTC

Figure 7.1: Distribution of citizens' degrees of compensation for LTC and childcare



We create a new dependent variable *ltc_child_compensation* that take on the value 1 for the subjects who find that applying the equity principle is more acceptable for intra-familial LTC than for grandparental childcare (green triangle). This variable takes on the value -1 for the subjects who find applying the equity principle is more acceptable for grandparental childcare than for intra-familial LTC (yellow triangle). It take on the value of 0 for whom the applying

of the equity principle for different ITT is equally acceptable (diagonal). The subjects who state no compensation in both cases (see (0, 0)-circle)) were excluded from the analysis.

The way the variable is constructed 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. We use the value 0, i.e. subjects for whom the applying of the equity principle is for intra-familial LTC and grandparental childcare is equally acceptable (diagonal), as a reference category.

The models 1, 2 and 3 are organized in the same way as in previous sections: the baseline model in column 1 employs all covariates described in Section 3 except personality traits; in model 2, we add Big Five personality traits; in model 3, we re-estimate model 1 but replaced *middle_generation* and *old_generation* variables with *log_age*. The regression results are presented in table 7.9. Let us look at green triangle first. Religious subjects, subjects who adhere to the norm of indirect reciprocity, conscientious subjects and subjects belonging to middle and old generation are less likely to accept larger compensation for informal LTC than for a grandparental childcare. Subjects having children are more likely to accept an unequal compensation in favor of LTC. Let us look at yellow triangle now. Subjects whose school education qualifies them to enter higher education and subjects with higher household income are less likely to accept larger compensation for grandparental childcare than for a LTC. Subjects having children are more likely to accept accept an unequal compensation in favor of grandparental childcare.

Table 7.9: Compensation for ITT: multinomial probit model

	(1)	(3)	(4)	(6)	(7)	(9)	(10)	(12)
VARIABLES	_1	1	_1	1	_1	1	_1	1
family_most_important	-0.0877	-0.119	-0.0868	-0.141	-0.0935	-0.107	-0.0785	-0.114
	(0.120)	(0.0961)	(0.125)	(0.0997)	(0.120)	(0.0961)	(0.121)	(0.0962)
indirect_reciprocity	0.0283	-0.245**	0.0110	-0.214*	0.0273	-0.252**	0.0362	-0.240**
	(0.143)	(0.116)	(0.148)	(0.120)	(0.143)	(0.116)	(0.144)	(0.116)
religious	-0.213	-0.229**	-0.136	-0.188*	-0.226*	-0.219**	-0.221	-0.232**
	(0.136)	(0.109)	(0.140)	(0.113)	(0.137)	(0.109)	(0.137)	(0.109)
female	0.140	-0.0398	0.0892	-0.0228	0.146	-0.0427	0.317**	0.0407
	(0.119)	(0.0951)	(0.129)	(0.103)	(0.119)	(0.0952)	(0.144)	(0.111)
middle_generation	-0.262	-0.298**	-0.243	-0.267**			-0.262	-0.296**
	(0.167)	(0.129)	(0.173)	(0.135)			(0.167)	(0.129)
old_generation	-0.275	-0.615***	-0.266	-0.573***			-0.00249	-0.477**
	(0.221)	(0.179)	(0.229)	(0.185)			(0.253)	(0.206)
high_education	-0.481***	-0.0396	-0.460***	-0.0351	-0.463***	-0.0519	-0.495***	-0.0448
	(0.129)	(0.101)	(0.133)	(0.104)	(0.129)	(0.101)	(0.129)	(0.101)
household_income	-0.345**	-0.0454	-0.394***	-0.0153	-0.347**	-0.0378	-0.337**	-0.0405
	(0.137)	(0.111)	(0.140)	(0.114)	(0.137)	(0.112)	(0.137)	(0.111)
regularly_employed	-0.0488	-0.0105	-0.000268	-0.0131	-0.0717	0.0602	-0.0503	-0.0123
	(0.150)	(0.122)	(0.156)	(0.126)	(0.137)	(0.111)	(0.150)	(0.122)
gave_care_personally	-0.184	-0.184	-0.187	-0.188	-0.184	-0.182	-0.185	-0.185
	(0.141)	(0.115)	(0.145)	(0.119)	(0.141)	(0.115)	(0.141)	(0.115)
parents_alive	-0.166	-0.139	-0.215	-0.170	-0.144	-0.122	-0.187	-0.150
	(0.161)	(0.133)	(0.165)	(0.137)	(0.156)	(0.128)	(0.161)	(0.134)
children	0.456***	0.233**	0.443***	0.206*	0.434***	0.281**	0.448***	0.226*
	(0.152)	(0.116)	(0.158)	(0.120)	(0.157)	(0.120)	(0.152)	(0.116)
family_ties_bad	-0.0794	0.0440	0.000591	0.0995	-0.0856	0.0700	-0.125	0.0207
	(0.340)	(0.260)	(0.348)	(0.268)	(0.339)	(0.260)	(0.341)	(0.261)
family_relations_worse	-0.0670	-0.150	-0.105	-0.221	-0.0843	-0.160	-0.0699	-0.152
	(0.189)	(0.150)	(0.198)	(0.157)	(0.189)	(0.149)	(0.189)	(0.150)
neuroticism			-0.00217	-0.0106				
			(0.0384)	(0.0306)				
extraversion			0.0135	0.0374				
			(0.0359)	(0.0286)				
openness_to_experience			0.0156	-0.0236				
			(0.0367)	(0.0289)				
agreeableness			-0.00957	-0.0131				
			(0.0431)	(0.0346)				
conscientiousness			-0.0145	-0.0726**				
			(0.0455)	(0.0362)				
log_age					-0.251	-0.715***		
					(0.267)	(0.208)		
old_generation#female							-0.555**	-0.281
							(0.252)	(0.210)
Constant	2.173**	1.252	2.529**	1.665*	2.969**	3.548***	2.043**	1.188
	(0.986)	(0.805)	(1.154)	(0.939)	(1.294)	(1.025)	(0.989)	(0.807)
$Wald\ \chi^2$	82.91***		84.09***		81.80***		87.11***	
Observations	1,605	1,605	1,515	1,515	1,604	1,604	1,605	1,605

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

In model 4, we introduce the interaction of *old_generation* with *female* that has a significant negative effect on probability to accept an unequal compensation in favor of grandparental childcare, while *female* itself turns to be significant and positive and belonging to old generation loses its significance. Hence, women belonging to the old generation differ in their social acceptance of applying the equity principle for different ITT from women belonging to the middle and young generation. The corresponding plots show significant marginal effect (see Appendix C.4.). Apart from that, no other changes occur. We also test the interaction of *parents_alive*, *children*, *gave_care_personally* and *middle_generation* with female respectively. The interaction terms do not generate significant coefficient estimators, nor do the corresponding plots show significant marginal effects, while the performance of all other variables remains stable. These results are not reported here and available upon request.

In table 7.10, we report only the significant marginal effects for all predicted outcomes. Let us look at green triangle first. The probability of accepting an unequal compensation in favor of informal LTC is on average about 16 percentage points lower for subjects belonging to *old_generation* and about 6 percentage points lower for subjects belonging to *middle_generation*. It is about 8 percentage points lower for subjects adhering to the norm of *indirect_reciprocity*, about 5 percentage points lower for *religious* subjects and about 2 percentage points lower for conscientious subjects (*conscientiousness*). Let us look at yellow triangle now. The probability of accepting an unequal compensation in favor of grandparental childcare declines by 7 percentage points if a subject' school education qualifies herself to enter higher education (*high_education)*. It is about 5 percent higher for subjects having *children*. Jumping from one household income class to the next (average distance 500 Euro) decreases the probability of accepting an unequal compensation in favor of grandparental childcare by 4 percentage points.

Table 7.10: Compensation for ITT: significant marginal effects

Variable	dy/dx	Std. Err.
indirect_reciprocity		
1	.0283	.0224
2	.0474	.0299
3	-.0757**	.0311
religious		
1	-.0128	.0191
2	.0615**	.0282
3	-.0487*	.0293
children		
1	.0488**	.0194
2	-.0778***	.0299
3	.0290	.0309
middle_generation		
1	-.0140	.0236
2	.0775**	.0323
3	-.0635*	.0338
old_generation		
1	.0118	.0321
2	.1456***	.0461
3	-.1573***	.0465
high_education		
1	-.0717***	.0176
2	.0393	.0255
3	.0324	.0269
household_income		
1	-.0512***	.0196
2	.0321	.0277
3	.0191	.0295
conscientiousness		
1	.0045	.0065
2	.0156*	.0090
3	-.0201**	.0095

*** p<0.01, ** p<0.05, * p<0.1

In sum, we find that religiosity, respondents' age and socio-economic position, self-serving bias variables and personality traits explain differences in social acceptance of applying the equity principle for different ITT. Belonging to the old generation has a strongest negative effect on accepting an unequal compensation in favor of informal LTC. This effect might be explained through changing perspective: subjects belonging to the old generation are potential care-receivers rather than caregivers. Being qualified to enter higher education has the strongest

negative effect on accepting an unequal compensation in favor of grandparental childcare. Again, family valuation do not matter. Sex shows no direct effect until we include interaction terms. Females belonging to the old generation are less likely to accept larger compensation for grandparental childcare than for a LTC, while females belonging to the middle and young generation are more likely to accept it.

7.4.5 Sensitivity analyses

We run number of sensitivity analyses to test the robustness of our results. For the questions (1) and (2), we used *fair_care_compensate* and *fair_child_compensate* as dependent continuous variables and run tobit-regressions with it. The results are largely similar.

For all three questions, we also control for political orientation, distance to parents, general trust and trust in government, being in good health, being married and being born outside Germany. All these variables are insignificant and do not change the performance of other variables. Detailed information on the sensitivity analyses is provided in the supplementary material (available upon request).

7.5 Discussion and conclusions

Changes in the demographic structure and the family structure bring new challenges for families and the government. Population ageing occurring due to the combined effect of a decrease in the fertility rate and an increase in the survival rate causes crucial changes in demand and supply of intergenerational transfers (e.g., Kluzer et al., 2010). Among the wide range of intergenerational transfers, organising LTC appears to be one of the most important issues in ageing society. We observe an increasing number of people needing LTC that coincides with the declining number of potential providers of LTC for dependent elderly people (e.g., Colombo et al., 2011; Huber et al., 2012). Moreover, dependent elderly people strongly prefer to be cared in their private homes (e.g., Eurobarometer, 2007). Substantial amount of care is provided by

family members, fully or in part (e.g., Triantafillou et al., 2010). Providing home care comes at considerable opportunity costs occurring due to income losses. This increase in demand for LTC coincides with an increase in female labor market participation and a steadily increasing demand for more childcare facilities. Grandparental childcare remains the most popular alternative to formal childcare (e.g., Hank and Buber, 2009). At the same time, Germany witnesses an unprecedented wealth accumulation. For the current decade, transfers are expected to amount to € 4.6 billion (e.g., Sieweck, 2011). This accumulation opens the possibility to pay for ITT.

These empirical phenomena shape the question whether the equity principle should be applied for ITT. The literature provides some evidence that equity principle within the family plays a role, but it is far from universally accepted (e.g., Norton et al., 2013). However, little is known about individual citizens' view on applying the equity principle within the family.

To understand the citizens' view better, we provide a comprehensive study that relates respondents' personal characteristics to their answers regarding their acceptance to compensate for ITT. It is based on a representative survey among German citizens conducted in 2014 and 2015. We use two vignettes to elicit the social acceptance of applying the equity principle within the family. The first vignette considers a situation where one of two daughters provided LTC to her grandmother and waived part of her wage for this reason. The second vignette describes the situation in which grandparents regularly looked after the children of one daughter. At the same time, another daughter paid the childminder who cared for her children. Respondents are asked state the fair distribution of inheritance among the daughters. Some 80% of the subjects stated that intra-familial LTC should be compensated, i.e. they accept the equity principle for intra-familial LTC. At the same time, only 38% of subjects stated that grandparental childcare should be compensated, i.e. they accept the equity principle for grandparental childcare. Some 53 percent of the respondents state that LTC should be compensated to a larger degree than

grandparental childcare, while only approx. 13 percent of the respondents state that grandparental childcare should be compensated to a larger degree than LTC. In our descriptive study, we explore possible patterns behind these empirical phenomena by answering three research questions:

1) What characterises individuals who accept the equity principle for intra-familial LTC?
2) What characterises individuals who accept the equity principle for grandparental childcare?
3) What characterises individuals who find that applying the equity principle is more acceptable for one form of ITT than for the other?

Before we start with individual characteristics, let us briefly consider the general picture: The majority accepts the equity principle for intra-familial LTC but not for grandparental childcare. One possible explanation could be that, for the grandparents, the relationship with the grandchildren is gratifying enough and they do not need any additional remuneration (e.g., Tobio et al 2010). Difference in social acceptance of applying the equity principle for different ITT might also be explained with evolutionary theory: investing in downward generations is more important for the family survival than investing in upward generations and therefore, the majority accepts equity principle for informal LTC but not for grandparental childcare. Finally, the differences in social acceptance of applying the equity principle for different ITT might be explained through intergenerational differences in accumulated wealth. Laferrere and Wolff (2006) argue that the current level of retirement provides the old generation with high income in addition to accumulated wealth, so additional remuneration for grandparental childcare does not seem to be needed.

Turning to the interpersonal differences, we differentiate between different types of possible factors, among them the valuation of the family, respondents' age, sex and socio-economic position and self-serving bias variables. Our main results can be summarized as follows: First,

we find that age has the strongest effect: subjects belonging to the *old_generation* are more likely to accept the equity principle for informal LTC as well as for granparental childcare. Moreover, subjects belonging to the *old_generation* are less likely to accept an unequal compensation in favor of informal LTC. Second, family valuation does not matter in any of the dimensions: subjects who evaluate the family to be very important to them do not differ in their social acceptance of the equity principle for ITT from other subjects Third, it is puzzling for us that being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of ITT. Looking closer, however, we find it to have a moderating effect on other important variables For instance, including the interactions shows that women having children differ in their social acceptance from other subjects: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation.

We are among the first to look at these questions. Our results are interesting but only pose a starting point. First, they are only descriptive while we cannot offer a straight-forward causal interpretation at this point. Second, we can only draw on a limited number of explanatory factors. For instance, we lack information on the number of respondents' siblings, number of children and their age. Having siblings means that subjects can share the burden of informal LTC provision, i.e. it reduces each child propensity to act as caregiver. The number of children and, in particular, their age could provide insights on the relevance of childcare assistance. Moreover, we lack information on country of origin and for subjects born in Germany, whether they come from the Eastern or Western part. Here we argue that values and norms strongly vary amongst regions and obtaining information on country of origin is very important for deeper understanding of citizens' view on equity principle within the family and on wealth transfer taxation.

Like many other studies on values and norms (e.g., Schokkaert and Cappeau, 1991), our regressions have limited predicted power, i.e. they leave large parts of the variance in the dependent variable unexplained. This is not truly surprising, given subjective nature of social acceptance. It is rather reasonable in this case: if the subjects are put into the position of impartial spectator, we should not expect self-serving and socio-economic variables to have inordinate explanatory power. In our study, the effect of self-serving covariates is not strong: Among variables capturing self-serving bias, only having children has a significant effect. Therefore, we can draw the conclusion that our vignettes are properly designed and the respondents' answers measure moral concerns and not only personal self-interest. As the socio-demographic data cannot sufficiently explain the variance in the factors, we need other additional covariates for the research on social acceptance.

While the separate results concerning intra-familial LTC and grandparental childcare are useful to understand the single decisions within households, the comparison of social acceptance of applying the equity principle for two ITTs provides a deeper understanding of a family as a whole. Understanding the preferences for compensation for ITTs is of political relevance: If citizens perceive that one time transfer is worth compensating and another not, policy makers may need to modify social welfare policies in order to provide this compensation from public funds. We might interpret the results in the following way: given a budget pressure, governments should better support informal LTC. The majority does not expect material reward for grandparental childcare. Moreover, by increasing the knowledge about the inter-personal characteristics that explain the differences in social acceptance of applying the equity principle for ITT, we can improve our understanding about citizens' support of certain policies or reform concepts (e.g., Bischoff et al., 2013).

In future research, it seems promising to add open-ended questions in order to understand the argumentation behind social acceptance better. For instance, the question "Why do you think

grandparental transfers should not be compensated?" Moreover, it could be useful to add individualism-collectivism scale to the survey (see Triandis and Gelfland, 1998). The scale is designed to measure four dimensions of collectivism and individualism. Individualistic subjects attach great importance to private interests and therewith to self-reliance, competition and emotional distance from group members. Collectivistic subjects give high priority to common interests and thereby to sociability, family integrity and interdependence. Chen et al. (1997) find that subjects scoring high on different dimensions of collectivism show different preferences for applying the equity principle. Hofstede (1980) and Thandis et al. (1988) find that there are cross-cultural differences and classify collectivist and individualistic cultures: Western countries are categorized as individualistic. Individualistic orientation traditionally increases with level of industrialization and wealth accumulation (e.g., Triandis and Gelfland, 1998). Taking everything into account, the individualism-collectivism scale seems to be very promising indicator for our future research: at the individual level and as an indicator that characterizes the country of respondents' origin.

In our study, we captured the measure of family importance, but we should also seek information on subjects adherence to the norm of familism. Subjects who adhere to this norm prefer a form of social organization in which the interests of the individuals are subordinated to those of the family. We can capture it using the Bardis familism scale (see Bardis, 1959). We expect that subjects scoring high on familism are less likely to accept the equity principle within the family. Finally, we could make use of the measures of materialism and post-materialism using "Inglehart-index" that has already been included in several surveys such as World Values Survey (e.g, Inglehart, 2008). Materialist societies focus on the materialistic needs such as economic growth or a strong national defense. Post-materialism shifts the focus to nonmaterial goods such as clean environment or personal freedom. We expect that subjects who attach big value to post-materialism are less likely to accept the equity principle for ITT.

8 Conclusion

8.1 Contributions

This thesis has addressed important issues of IGT and wealth transfer taxation. Its empirical analysis is based on a representative survey among the German population. This survey was conducted by GESIS in 2014 and 2015 and included two blocks of questions on intergenerational relations, LTC, and inheritance taxation that we submitted. Chapter 4 has addressed citizens' view on inheritance taxation. Chapters 5 and 6 have addressed the determinants of citizens' preferences for a tax relief for caregiving heirs, in particular for family care assistants. Chapter 7 has taken one step back and addressed an issue of applying the equity principle within the family.

While the economic literature concentrates on models of family, motives underlying IGT and related policies (e.g., Bernheim et al., 1985; Coall and Hertwig, 2010), citizens' view on intra-familial IGT and wealth transfer taxation in a system is largely missing. In this thesis, we fill this gap and link economics and social sciences through the analysis of citizens' view on these issues. The papers in this thesis contribute to the literature on family economics, public economics and behavioural economics using the insights from social sciences.

In the chapter 4, we focus on citizens' view on the fundamental question whether or not wealth transfers should be taxed at all: Some 40 percent of respondents agree that inheritances beyond a certain size should be taxed while almost 60 percent oppose the taxation of wealth transfers. We run probit regressions to learn more about the factors that drive this fundamental opposition. In line with studies on other taxes, material self-interest, redistributive preferences and the perceived tax burden are found to influence citizens' acceptance for the taxation of inheritances. Unlike the few other studies on wealth transfer taxation we find tax acceptance to increase rather than decrease in subjects' age. Being at the heart of intra-familial exchange relations, women are more likely to oppose wealth transfer taxation than men are. Support for inheritance taxation is higher

among subjects who expect the typical German family to give higher inheritances in exchange for LTC received.

The second topic of this thesis emphasizes the public acceptance of policies that pave the way for a more active role of family care assistants in LTC provision in the context of wealth transfer taxation. The analysis on this second topic proceeds in two steps with first step being a background analysis for the second one. In the main analysis (step 2), we provide empirical evidence on the factors that drive the support for a more active role of family care assistants using a probit approach. We find the support for a more active role of family care assistants to be driven by subjects' material self-interest and by their personal experience in LTC-provision. Most importantly, we find evidence for a clear line of conflict: Citizens with alive parents are more likely to support a more active role of family care assistants than citizens whose parents are dead.

In the Chapter 7, we take one step back and address an issue of social acceptance of applying the equity principle within the family. An empirical data based on a representative GESIS Panel shows a discrepancy: almost 80 percent of the respondents state that intra-familial LTC should be compensated; only 38 percent state that grandparental childcare should be compensated. We run ordered probit regressions in order to analyze differences in social acceptance of applying the equity principle for intra-familial LTC and grandparental childcare separately. Moreover, we run in ordered probit regressions to analyze the acceptance of equity principle for two ITT within subjects. Our key results can be summarized as follows: First, we find that age has the strongest positive effect on the acceptance of the equity principle for both informal LTC and grandparental childcare. Second, family valuation does not matter in any of the dimensions. In other words, Subjects who evaluate the family to be very important for them do not differ in their social acceptance of the equity principle for ITT from other subjects. Third, it is puzzling for us that being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of ITT. Looking closer, however, we find sex to have

a moderating effect on other important variables. In particular, including interaction terms shows that women having children differ in their social acceptance from other subjects: men having children and women without children are less likely to support the compensation for informal LTC; only if the women have children themselves, they turn to support the compensation. To the best of our knowledge, it is the first study that analyzes ITT within subjects.

In this thesis, we focused on citizens' view on intra-familial IGT and wealth transfer taxation. A key result is that self-interest strongly matters in case of citizens' view on wealth transfer taxation. We find tax acceptance to increase rather than decrease in age. The same holds for social acceptance of applying the equity principle in intra-familial transfer relations. Surprisingly, we find no support that women differ in their preferences from men in case of tax relief. Moreover, being a female by itself does not explain the differences in social acceptance even though females are much more actively involved in all types of ITT. We are convinced that better understanding of a family and family roles brings valuable insights into understanding of policy preferences and therefore further research on these issues is needed, especially in times of substantial changes in the structure of IGT.

8.2 Perspectives for future research

The analyses presented here provide some interesting avenues for future research projects. The role of family care assistants in the modern ageing societies is not yet well understood. Here, further studies using more differentiated measure of citizens' view as a dependent variable are needed. Additionally, qualitative research methods such as individual interviews and focus group interviews can be used to obtain detailed information on family roles and attitudes to home care. Moreover, citizens' view on intra-familial transfer relations has been largely underinvestigated. Existing studies mainly concentrate on models behind the transfers and empirical evidence on time transfer provision. The citizens' view on applying the equity principle within the family is still largely missing. As the socio-demographic data cannot sufficiently explain the variance in

the answers, we need other additional covariates such as individualism-collectivism scale and "Inglehart-index" for the research on social acceptance. Moreover, adding open-ended questions could be helpful to understand the considerations behind social acceptance better.

Having these additional variables, it seems promising to consider acceptance of applying the equity principle in intra-familial transfer relations and acceptance of wealth transfer taxation in a system. However, when we conduct an explanatory study and attach causal interpretation to regression coefficients, we should be aware that the answers to the questions on social acceptance of applying the equity principle and acceptance of wealth transfer taxation can be simultaneously given. To account for this, we need to use 3SLS-method that estimates all coefficients for a system of equations simultaneously and takes into account possible correlations across equations.

A Appendix to Chapter 5

A.1 Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	tax_relief_multi																							
2	expect_inheritance	0.05																						
3	house_dynasty	0.03	0.10																					
4	parents_alive	0.00	0.17	0.12																				
5	not_married	0.00	-0.02	0.01	0.13																			
6	no_children	-0.04	0.01	0.06	0.19	0.44																		
7	female	-0.04	-0.02	-0.03	0.00	0.01	-0.03																	
8	tax_overestimation	0.09	-0.04	-0.03	0.15	0.12	0.07	0.06																
9	old_fear_dependence	-0.02	0.01	-0.04	-0.05	-0.05	-0.01	0.05	-0.02															
10	indirect_reciprocity	0.05	0.03	0.07	0.04	0.04	0.01	-0.13	0.00	-0.01														
11	rightwing	-0.03	0.00	0.00	-0.09	0.00	-0.04	-0.02	-0.09	-0.01	0.00													
12	gave_care_personally	0.02	0.04	0.09	-0.23	-0.05	-0.07	0.09	-0.08	0.08	-0.01	0.04												
13	log_age	0.01	-0.02	-0.12	-0.54	-0.35	-0.45	-0.04	-0.22	0.07	-0.07	0.11	0.21											
14	household_income	-0.05	0.07	0.07	0.03	-0.21	-0.01	-0.04	-0.21	0.02	-0.03	-0.03	-0.04	0.07										
15	high_education	-0.11	0.07	0.05	0.15	0.12	0.23	-0.04	-0.04	-0.05	0.06	-0.08	-0.12	-0.27	0.19									
16	middle_generation	0.01	0.06	0.01	0.17	-0.09	-0.15	-0.02	-0.02	0.06	-0.05	-0.07	0.02	0.19	0.10	-0.10								
17	old_generation	0.01	-0.06	-0.11	-0.57	-0.18	-0.21	-0.02	-0.15	0.01	-0.02	0.14	0.16	0.63	-0.04	-0.16	-0.56							
18	neuroticism	0.01	-0.04	0.00	0.03	-0.01	0.07	0.16	0.04	0.05	0.00	0.04	-0.03	-0.08	-0.06	-0.01	-0.02	-0.05						
19	extraversion	0.05	0.02	0.01	0.05	-0.02	-0.06	0.12	0.03	-0.07	-0.01	-0.01	0.02	-0.06	0.05	-0.02	-0.04	-0.02	-0.20					
20	openness to experience	-0.03	0.04	-0.05	-0.04	0.04	0.01	0.13	0.03	-0.01	0.00	-0.04	0.02	0.04	-0.03	0.05	-0.01	0.05	-0.12	0.20				
21	agreeableness	0.00	0.02	0.03	0.00	0.02	-0.07	0.12	0.06	-0.01	0.01	-0.05	-0.01	0.05	-0.01	0.04	0.04	0.01	-0.09	0.06	0.08			
22	conscientiousness	0.01	-0.01	-0.02	-0.07	-0.14	-0.15	0.19	-0.05	0.03	-0.04	0.03	0.07	0.19	0.03	-0.13	0.06	0.09	-0.10	0.21	0.09	0.05		
23	family_most_important	-0.04	-0.03	0.02	0.00	-0.10	-0.04	0.06	-0.01	-0.02	0.02	0.03	0.01	0.05	-0.01	0.04	-0.01	0.04	0.03	-0.07	-0.04	0.03	-0.07	
24	parents_in_same_house	0.05	0.09	0.10	0.22	0.15	0.21	-0.10	0.03	-0.01	0.07	0.00	0.02	-0.26	-0.05	0.02	-0.03	-0.14	0.04	-0.03	-0.04	-0.06	-0.12	-0.03

B Appendix to Chapter 6

B.1 Correlation matrix

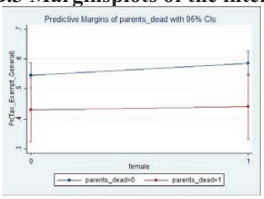
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	parents_dead																						
2	female	-0.02																					
3	expect_inheritance	-0.16	-0.01																				
4	distance_to_parents_30_ driving minutes_or_more	-0.35	0.04	0.08																			
5	high_education	-0.14	-0.04	0.09	0.18																		
6	children_under_16	-0.26	0.02	0.03	0.07	0.05																	
7	gave_care_personally	0.23	0.10	0.02	-0.17	-0.12	-0.14																
8	care_in_family	-0.05	0.01	0.11	-0.03	0.02	-0.02	0.28															
9	family _ties_bad	0.00	0.01	0.02	0.07	0.01	0.00	-0.04	0.00														
10	old_fear_dependence	0.02	0.06	0.01	0.01	-0.04	0.01	0.06	0.00	0.06													
11	general_trust	-0.03	-0.01	-0.05	0.02	0.15	0.06	-0.09	0.00	-0.05	-0.01												
12	not_married	-0.10	0.03	-0.02	0.07	0.11	-0.21	-0.05	-0.01	0.03	-0.06	0.00											
13	no_children	-0.20	-0.04	0.02	0.15	0.26	-0.26	-0.09	0.00	0.05	-0.02	0.02	0.42										
14	log_age	0.53	-0.06	-0.04	-0.21	-0.27	-0.25	0.21	-0.03	0.02	0.04	-0.03	-0.33	-0.49									
15	household_income	-0.09	-0.05	0.08	0.06	0.23	-0.03	-0.06	-0.01	0.00	0.00	0.14	-0.21	0.01	0.03								
16	born_outside_germany	0.02	0.04	-0.02	0.05	0.04	0.05	-0.01	0.02	0.03	0.03	-0.01	-0.05	-0.04	-0.04	-0.06							
17	rightwing	0.05	-0.02	0.00	-0.01	-0.05	-0.06	0.01	-0.02	0.01	-0.02	0.00	0.00	-0.03	0.07	-0.06	0.03						
18	family_most_important	0.02	0.06	-0.03	-0.03	0.03	0.04	0.03	0.02	-0.02	-0.01	0.04	-0.10	-0.04	0.06	-0.03	-0.03	0.02					
19	neuroticism	-0.03	0.19	-0.02	0.00	-0.03	0.03	0.00	-0.03	0.02	0.06	-0.10	0.01	0.04	-0.05	-0.06	0.05	0.03	0.03				
20	extraversion	-0.04	0.09	0.02	-0.04	-0.01	0.05	0.01	0.02	-0.04	-0.07	0.06	-0.03	-0.05	-0.05	0.04	0.00	-0.02	-0.04	-0.19			
21	openness to experience	0.03	0.12	0.04	0.06	0.09	-0.01	0.01	-0.01	0.00	-0.04	0.08	0.02	0.04	0.02	-0.01	-0.02	-0.05	-0.02	-0.09	0.19		
22	agreeableness	-0.01	0.13	0.00	-0.01	0.04	0.00	0.01	0.05	-0.04	-0.03	0.15	0.03	-0.05	0.04	-0.01	0.03	-0.05	0.03	-0.08	0.06	0.04	
23	conscientiousness	0.08	0.18	0.01	-0.06	-0.11	0.00	0.07	-0.03	0.01	0.04	-0.05	-0.14	-0.16	0.19	0.02	-0.02	0.03	-0.02	-0.09	0.21	0.08	0.04

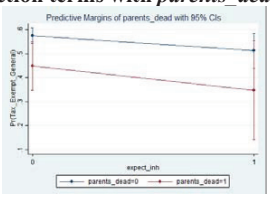
B.2 Regression with the interactions between *parents_dead* and all other independent variables

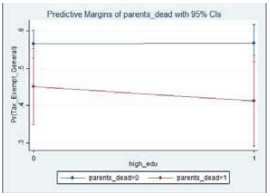
VARIABLES	Coeff.	Std. Error	Coeff.	Std. Error
parents_dead	-1.196	(2.520)	0.844	(1.910)
female	0.104	(0.0741)	0.177***	(0.0642)
expect_inheritance	-0.161	(0.102)	-0.147*	(0.0879)
distance_to_parents_30_driving_minutes_or_more	0.208**	(0.0807)	0.194***	(0.0703)
high_education	0.00454	(0.0837)	-0.0193	(0.0693)
children_under_16	0.148	(0.0991)	0.195**	(0.0820)
gave_care_personally	0.248***	(0.0930)	0.235***	(0.0814)
care_in_family	-0.0592	(0.0785)	-0.00564	(0.0679)
not_married	0.0610	(0.0896)	0.124	(0.0789)
no_children	0.162	(0.112)	0.168*	(0.100)
log_age	0.234	(0.159)	0.200	(0.137)
household_income	-0.153*	(0.0898)		
family_ties_bad	-0.0494	(0.192)	-0.0842	(0.173)
old_fear_dependence	0.154	(0.0965)	0.116	(0.0852)
general_trust	4.60e-05	(0.0839)	0.0647	(0.0722)
parents_dead#female	-0.0750	(0.137)	-0.144	(0.122)
parents_dead#expect_inheritance	-0.103	(0.299)	-0.174	(0.248)
parents_dead#high_education	-0.103	(0.156)	-0.0287	(0.132)
parents_dead#children_under_16	-0.310	(0.321)	-0.183	(0.247)
parents_dead#gave_care_personally	-0.0898	(0.152)	-0.119	(0.135)
parents_dead#care_in_family	0.0636	(0.144)	0.0517	(0.129)
parents_dead#not_married	-0.0634	(0.156)	-0.177	(0.139)
parents_dead#no_children	-0.309	(0.217)	-0.175	(0.194)
parents_dead#log_age	-0.0871	(0.527)	-0.225	(0.459)
parents_dead#household_income	0.176	(0.154)		
parents_dead#family_ties_bad	0.420	(0.354)	0.516*	(0.307)
parents_dead#old_fear_dependence	0.0875	(0.182)	0.112	(0.163)
parents_dead#general_trust	0.0896	(0.150)	0.00828	(0.130)
Constant	0.0420	(0.903)	-1.079*	(0.561)
pseudo-R^2	0.0219		0.0194	
X^2-Stat	51.73***		59.72***	
Observations	1,711		2,228	

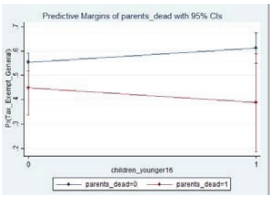
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

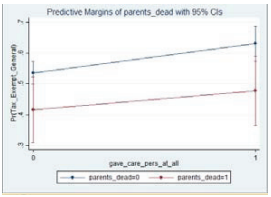
B.3 Marginsplots of the interaction terms with *parents_dead*

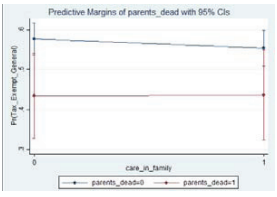


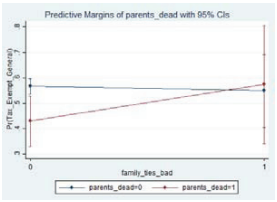


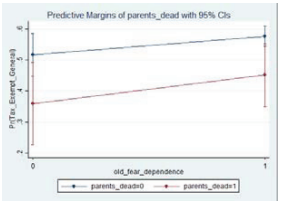


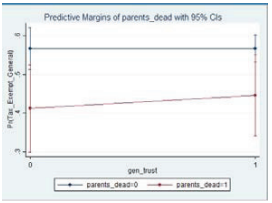


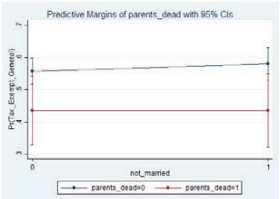


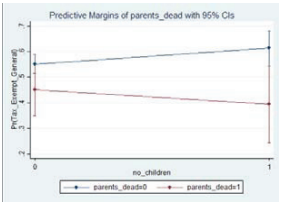


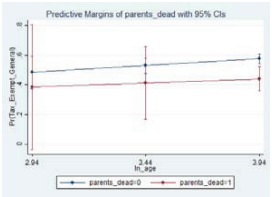


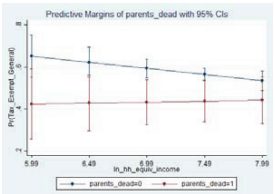










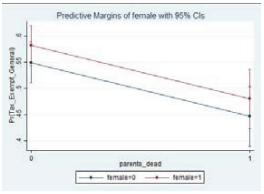


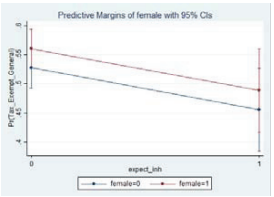
B.4 Regression with the interactions between *female* and all other independent variables

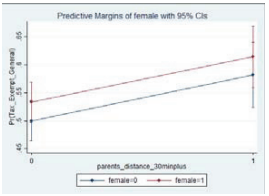
VARIABLES	Coeff.	Std. Error	Coeff	Std. Error
parents_dead	-0.238**	(0.121)	-0.128	(0.106)
female	1.073	(1.567)	1.902*	(1.011)
expect_inheritance	-0.163	(0.137)	-0.178	(0.116)
distance_to_parents_30_driving_minutes_or_more	0.417***	(0.118)	0.310***	(0.102)
high_education	0.0619	(0.0979)	0.0350	(0.0820)
children_under_16	-0.00101	(0.133)	0.124	(0.108)
gave_care_personally	0.241**	(0.106)	0.218**	(0.0940)
care_in_family	0.0260	(0.0943)	0.0272	(0.0822)
not_married	0.0797	(0.109)	0.0831	(0.0973)
no_children	0.0322	(0.131)	0.0967	(0.118)
log_age	0.316	(0.212)	0.312*	(0.177)
household_income	-0.134	(0.100)		
family_ties_bad	0.259	(0.233)	0.245	(0.200)
old_fear_dependence	0.177	(0.112)	0.114	(0.0977)
general_trust	0.195**	(0.0995)	0.204**	(0.0865)
female#parents_dead	-0.0240	(0.173)	-0.0620	(0.152)
female#expect_inheritance	-0.00312	(0.191)	0.0396	(0.165)
female#distance_to_parents_30_driving_minutes_or_more	-0.358**	(0.162)	-0.206	(0.141)
female#high_education	-0.167	(0.140)	-0.132	(0.117)
female#children_under_16	0.184	(0.184)	0.0517	(0.150)
female#gave_care_personally	-0.0335	(0.147)	-0.0337	(0.130)
female#care_in_family	-0.117	(0.132)	-0.0371	(0.115)
female#not_married	-0.0646	(0.148)	-0.0287	(0.131)
female#no_children	0.0883	(0.190)	0.0609	(0.171)
female#log_age	-0.336	(0.294)	-0.393	(0.250)
female#household_income	0.0995	(0.146)		
female#family_ties_bad	-0.444	(0.323)	-0.373	(0.286)
female#old_fear_dependence	-0.0250	(0.164)	0.0778	(0.145)
female#general_trust	-0.304**	(0.139)	-0.266**	(0.120)
Constant	-0.623	(1.119)	-1.609**	(0.715)
pseudo-R^2	0.0266		0.0221	
X^2-Stat	62.78***		68.08***	
Observations	1,711		2,228	

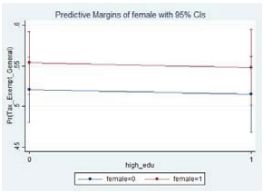
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

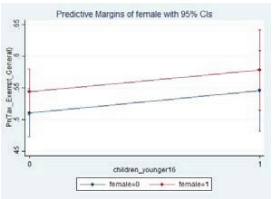
B.5 Marginsplots of the interaction terms with *female*

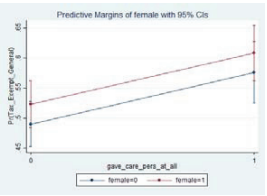


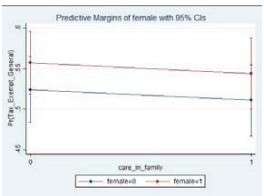


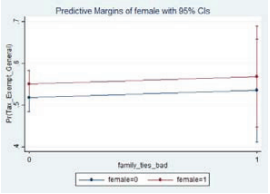


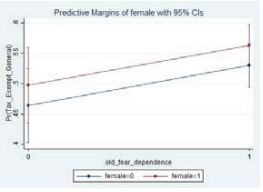


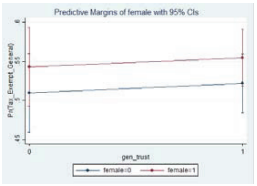


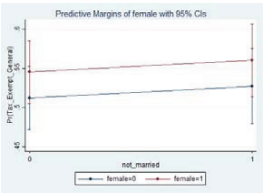


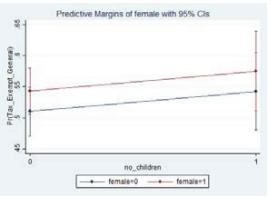


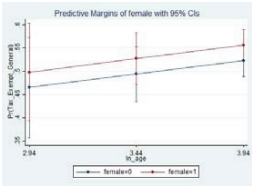


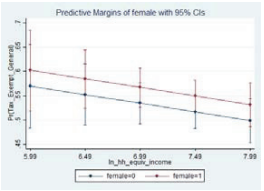










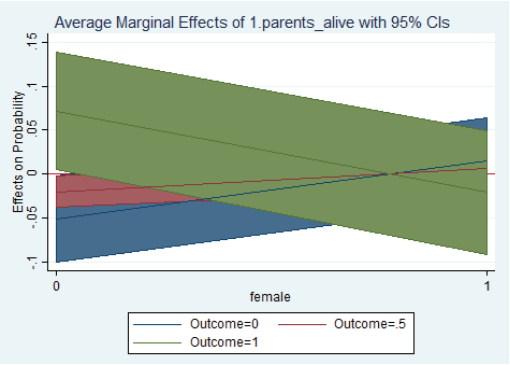


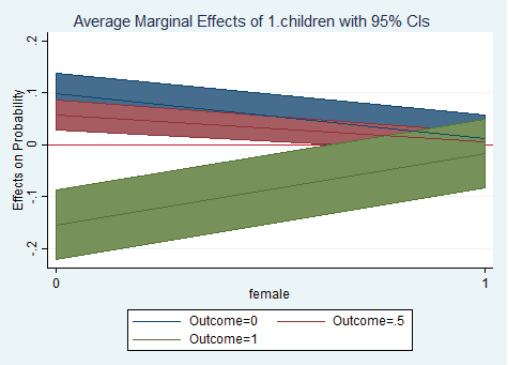
C Appendix to Chapter 7

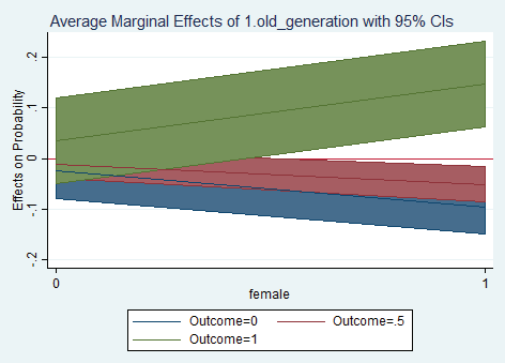
C.1 Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	fair_care_compensate_ordered	1																						
2	fair_child_compensate_ordered	0.13	1.00																					
3	ltc_childcare_compensation	0.18	-0.89	1.00																				
4	family_most_important	-0.02	0.03	-0.03	1.00																			
5	religious	0.04	0.06	-0.04	0.10	1.00																		
6	indirect_reciprocity	0.07	0.04	-0.04	0.05	0.05	1.00																	
7	female	0.00	0.03	-0.03	0.05	0.11	-0.12	1.00																
8	middle_generation	-0.01	-0.02	0.02	-0.02	0.02	-0.09	0.00	1.00															
9	old_generation	-0.04	0.10	-0.10	0.04	0.04	-0.02	-0.02	-0.56	1.00														
10	log_age	-0.05	0.11	-0.11	0.04	0.08	-0.09	-0.04	0.20	0.63	1.00													
11	high_education	0.12	-0.06	0.10	0.04	0.00	0.09	-0.01	-0.09	-0.17	-0.30	1.00												
12	household_income	0.06	-0.05	0.08	-0.02	-0.03	-0.03	-0.05	0.11	-0.03	0.10	0.20	1.00											
13	regular_employed	0.03	-0.07	0.07	-0.12	-0.06	-0.01	-0.06	0.38	-0.48	-0.17	0.10	0.33	1.00										
14	gave_care_personally	0.03	0.06	-0.05	-0.02	0.06	-0.04	0.09	-0.01	0.22	0.26	-0.12	-0.08	-0.11	1.00									
15	parents_alive	0.05	-0.05	0.07	-0.01	-0.03	0.05	0.01	0.18	-0.60	-0.55	0.17	0.05	0.31	-0.25	1.00								
16	no_children	-0.06	0.03	-0.06	0.04	0.08	-0.03	0.03	0.17	0.24	0.50	-0.24	0.01	-0.01	0.13	-0.22	1.00							
17	family_ties_bad	0.02	0.00	0.01	-0.03	-0.02	0.01	0.00	0.03	0.00	0.02	0.03	0.02	-0.04	0.01	0.01	-0.06	1.00						
18	family_relations_worse	-0.01	0.02	-0.02	-0.02	-0.02	-0.04	0.03	0.06	-0.04	-0.02	0.00	0.01	0.02	0.00	0.05	-0.11	0.06	1.00					
19	neuroticism	0.02	0.01	-0.01	0.03	0.06	-0.02	0.18	-0.01	-0.05	-0.08	0.00	-0.05	-0.02	-0.05	0.07	-0.06	-0.02	0.07	1.00				
20	extraversion	-0.03	-0.03	0.01	-0.07	0.03	-0.04	0.13	-0.01	-0.03	-0.06	-0.01	0.02	0.01	0.07	0.06	0.04	-0.06	-0.04	-0.16	1.00			
21	openness_to_experience	-0.01	0.02	-0.03	-0.05	0.04	-0.02	0.15	0.01	0.01	0.02	0.07	-0.01	-0.06	0.04	-0.01	-0.01	0.03	0.00	-0.12	0.18	1.00		
22	agreeableness	0.02	0.01	-0.01	0.03	0.07	0.00	0.10	0.05	0.00	0.05	0.03	-0.01	0.01	0.03	0.01	0.07	-0.04	-0.03	-0.08	0.02	0.05	1.00	
23	conscientiousness	-0.04	0.06	-0.06	-0.05	0.05	-0.08	0.16	0.08	0.09	0.20	-0.10	0.02	-0.03	0.07	-0.09	0.17	0.02	0.01	-0.10	0.20	0.09	0.04	1

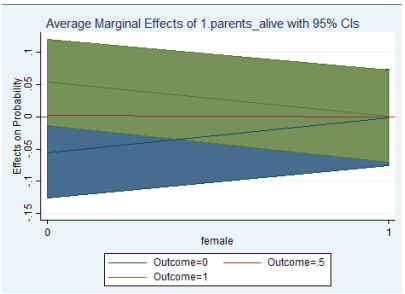
C.2 Compensation for LTC: Marginplots interactions with female

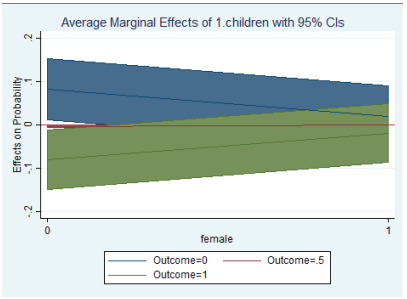


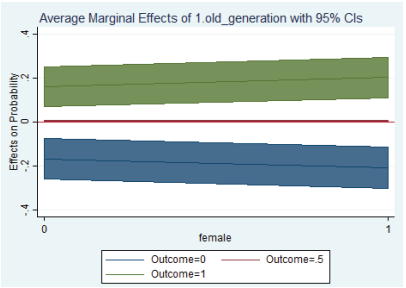




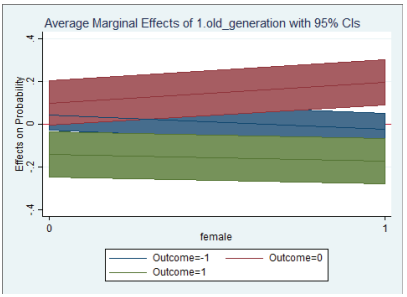
C.3 Compensation for grandparental childcare: Marginplots interactions with female







C.4. Compensation for ITT: Marginplots interactions with female



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