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# Should wealth transfers be taxed? Citizens' view on a fundamental question

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 Should wealth transfers be taxed? Citizens' view on a fundamental question.

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**Abstract** 

In a recent representative survey, German citizens are asked whether or not inherited

wealth beyond a certain amount should be taxed. Almost 60 percent stated that it should not be

taxed. We use this survey to identify the factors that drive this fundamental opposition against

the taxation of inherited wealth. We find monetary self-interest and redistributive preferences

to drive citizens' attitude in this matter. We account for other intra-familial transfers, in partic-

ular long-term care. Being at the heart of intra-familial exchange relations, women are more

likely to oppose wealth transfer taxation than men are. Citizens' attitude towards inheritance

taxation does not depend on their personal experience in giving long-term care. Expecting the

typical German family to reward intra-familial caregiving through a higher inheritance reduces

the opposition against the taxation of inherited wealth.

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#### 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: 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.

# 2. Review of Literature

#### 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). Altruistic motives imply that an increase

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).

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).

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

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).

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 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).

## 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

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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 pa-

rameter 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 macroeco-

nomic perspective, citizens' policy preferences may be influenced by whether or not they ex-

pect 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.

3. Data and Hypotheses

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, Ger-

many (GESIS, 2016). 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.

#### 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 1).<sup>3</sup>

#### [Figure 1 about here]

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

<sup>3</sup> The question was first by Postbank (2011).

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.

# 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  $100.000 \in$  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  $40.000 \in$ ."

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  $100.000 \in$  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 2 about here]

Figure 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 <code>expect\_inheritance</code> 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 <code>house\_dynasty</code> takes on the value 1 for all those who gave an affirmative answer (0 else). Third, we account for subjects' <code>household\_income</code> by calculating natural log of the equivalent household income using the OECD-square-root-rule (OECD, 2008). Subjects from high-income households are more likely to leave bequests to their offspring who then may have to pay inheritance tax. Subjects' opposition against the taxation of inherited wealth is expected to increase <code>expect\_inheritance</code>, <code>house\_dynasty</code> and <code>household\_income</code>.

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

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.

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. 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.

The correlation between *female* and *fair\_care\_exchange* and *expect\_care\_exchange* is negligible (-0.03 and 0.01 respectively).

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 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.

### f) inheritance-related beliefs and general political attitudes

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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).

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 startup support from their parents are morally obliged to support their own children in the same way. The second 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 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  $100.000 \in$ . 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 <code>distance\_to\_parents\_30\_diriving\_minutes\_or\_more</code> takes on the value 1 if the distance between subjects and their parents is 30 driving minutes or more (0 else). The dummy variable <code>parents\_in\_same\_house</code> 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. 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 2 to create binary variable *oppose\_inh\_taxation* that takes on the value 1 for subjects who state that inheritances should 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 1.

#### [table 1 and 2 about here]

Table 2 presents the regression results. 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.

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 figure 3).

#### [figure 3a and 3b about here]

Table 3 reports the marginal effect. A number of variables 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.

#### [Table 3 about here]

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 2.

<sup>7</sup> 

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

#### 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 selfinterest): 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.

#### 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.

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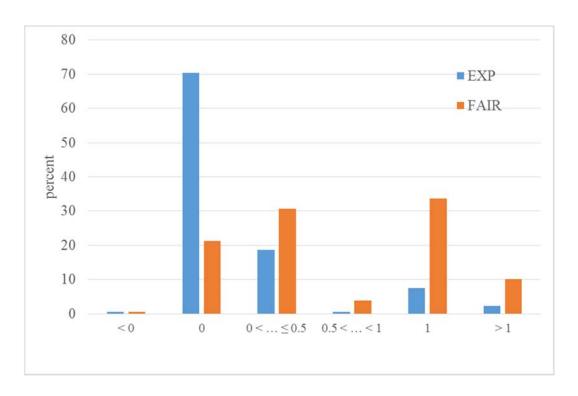
## **APPENDIX A: Correlation matrix**

|    |                              | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24   | 25   | 26   |
|----|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1  | oppose_inh_taxation          |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 2  | fair_care_exchange           | -0,02 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 3  | expect_care_exchange         | -0,10 | -0,01 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 4  | expect_inheritance           | 0,00  | 0,00  | 0,02  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 5  | house_dynasty                | 0,08  | 0,08  | -0,02 | 0,10  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 6  | household_income             | 0,00  | 0,08  | -0,02 | 0,07  | 0,04  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 7  | parents_dead                 | -0,17 | -0,02 | 0,07  | -0,17 | -0,13 | -0,04 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 8  | children                     | -0,02 | -0,08 | 0,01  | -0,01 | -0,05 | 0,02  | 0,19  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 9  | female                       | 0,12  | 0,01  | -0,04 | -0,01 | -0,03 | -0,02 | -0,03 | 0,03  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 10 | care_in_family               | 0,00  | -0,01 | -0,04 | 0,11  | 0,07  | -0,04 | -0,06 | 0,02  | 0,03  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 11 | gave_care_personally         | -0,06 | 0,03  | -0,01 | 0,04  | 0,09  | -0,02 | 0,23  | 0,07  | 0,07  | 0,24  |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
|    | inheritance_increase_inequa- |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 12 | lity                         | -0,10 | 0,04  | 0,02  | -0,01 | -0,03 | 0,10  | -0,04 | -0,02 | -0,01 | -0,07 | -0,05 |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 13 | indirect_reciprocity         | -0,02 | 0,05  | 0,06  | 0,02  | 0,09  | 0,00  | -0,02 | -0,01 | -0,12 | -0,02 | 0,00  | -0,03 |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 14 | tax_overestimation           | 0,14  | -0,04 | -0,01 | -0,04 | 0,00  | -0,18 | -0,16 | -0,07 | 0,06  | 0,03  | -0,07 | -0,05 | 0,00  |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 15 | expect_timing                | 0,02  | 0,00  | -0,03 | 0,01  | 0,03  | 0,03  | 0,06  | -0,03 | -0,02 | -0,01 | 0,03  | 0,04  | -0,04 | -0,03 |       |       |       |       |       |       |       |       |       |      |      |      |
| 16 | trust_in_ government         | -0,07 | -0,01 | 0,03  | 0,03  | 0,03  | 0,07  | -0,04 | 0,02  | -0,08 | 0,07  | 0,01  | -0,05 | 0,01  | -0,07 | -0,02 |       |       |       |       |       |       |       |       |      |      |      |
| 17 | parents_in_same_house        | -0,03 | 0,03  | -0,02 | 0,09  | 0,12  | -0,05 | -0,21 | -0,17 | -0,10 | 0,03  | 0,02  | -0,02 | 0,03  | 0,02  | -0,02 | -0,03 |       |       |       |       |       |       |       |      |      |      |
|    | distance_to_par-             |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
|    | ents_30_diriv-               |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |
| 18 | ing_minutes_or_more          | 0,04  | -0,04 | -0,01 | 0,11  | -0,04 | 0,06  | -0,35 | -0,16 | 0,05  | -0,02 | -0,18 | 0,04  | 0,01  | 0,07  | 0,02  | 0,04  | -0,18 |       |       |       |       |       |       |      |      |      |
| 19 | log_age                      | -0,21 | -0,03 | 0,02  | 0,00  | -0,13 | 0,09  | 0,55  | 0,46  | -0,05 | -0,01 | 0,24  | -0,04 | -0,06 | -0,25 | 0,09  | 0,02  | -0,19 | -0,23 |       |       |       |       |       |      |      |      |
| 20 | married                      | -0,06 | 0,00  | 0,00  | 0,01  | -0,03 | 0,20  | 0,14  | 0,46  | -0,01 | 0,01  | 0,06  | 0,02  | -0,04 | -0,13 | -0,01 | 0,04  | -0,14 | -0,09 | 0,35  |       |       |       |       |      |      |      |
| 21 | high_education               | -0,08 | 0,09  | 0,08  | 0,07  | 0,07  | 0,19  | -0,17 | -0,24 | -0,04 | 0,02  | -0,11 | 0,12  | 0,07  | -0,04 | 0,01  | 0,06  | 0,04  | 0,20  | -0,29 | -0,13 |       |       |       |      |      |      |
| 22 | received_inheritance         | -0,11 | 0,04  | 0,07  | 0,00  | 0,01  | 0,07  | 0,34  | 0,12  | -0,01 | 0,02  | 0,20  | 0,05  | -0,01 | -0,20 | 0,03  | 0,02  | -0,10 | -0,09 | 0,33  | 0,13  | -0,02 |       |       |      |      |      |
| 23 | neuroticism                  | -0,03 | 0,00  | 0,02  | -0,02 | -0,02 | -0,06 | -0,01 | -0,06 | 0,19  | 0,00  | -0,01 | 0,02  | 0,00  | 0,00  | 0,01  | -0,06 | 0,01  | -0,01 | -0,06 | 0,00  | 0,00  | -0,01 |       |      |      |      |
| 24 | extraversion                 | 0,07  | -0,04 | -0,04 | 0,01  | 0,03  | 0,04  | -0,07 | 0,04  | 0,13  | 0,04  | 0,04  | -0,05 | -0,03 | 0,07  | -0,05 | 0,01  | -0,04 | 0,00  | -0,08 | 0,01  | -0,01 | 0,00  | -0,18 |      |      |      |
| 25 | openness to experience       | 0,03  | 0,01  | 0,01  | 0,03  | -0,06 | -0,01 | 0,01  | -0,03 | 0,14  | -0,01 | 0,00  | -0,04 | -0,01 | 0,04  | 0,03  | -0,02 | -0,03 | 0,05  | 0,03  | -0,04 | 0,06  | 0,04  | -0,09 | 0,19 |      |      |
| 26 | agreeableness                | 0,02  | 0,04  | 0,02  | 0,01  | 0,04  | 0,02  | -0,02 | 0,06  | 0,11  | 0,05  | -0,01 | -0,02 | 0,03  | 0,05  | -0,02 | 0,04  | -0,05 | -0,01 | 0,04  | 0,00  | 0,03  | 0,02  | -0,09 | 0,08 | 0,07 |      |
| 27 | conscientiousness            | 0,08  | -0,07 | -0,01 | 0,00  | -0,03 | 0,03  | 0,06  | 0,15  | 0,19  | 0,00  | 0,05  | -0,07 | -0,03 | -0,04 | 0,00  | 0,02  | -0,12 | -0,05 | 0,17  | 0,13  | -0,12 | 0,01  | -0,07 | 0,18 | 0,06 | 0,06 |
|    |                              |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |

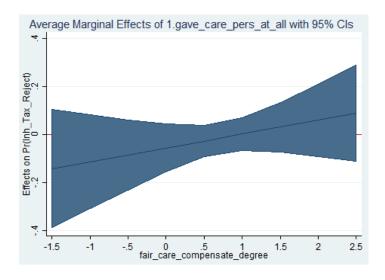
Figure 1: Survey question on subjects' policy preference on inheritance taxation

| "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  |  |  |  |  |  |  |  |  |  |

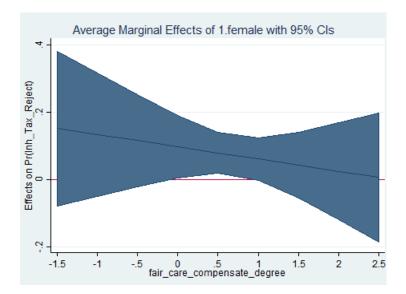
Figure 2: Histogram of fair\_care\_exchange and expect\_care\_exchange



**Figure 3a: Marginsplot of the interaction** *gave\_care\_personally #fair\_care\_exchange* 



**Figure 3b: Marginsplot of the interaction** *female#fair\_care\_exchange* 



**Table 1: Descriptive statistics** 

| Variable  | Obs   | Mean | Std. Dev. | Min  | Max  |
|---|-------|------|-----------|------|------|
| oppose_inh_taxation                             | 3,45  | 0.57 | 0.49      | 0    | 1    |
| fair care exchange                              | 3,01  | 0.70 | 0.52      | -1.5 | 2.5  |
| expect_care_exchange                            | 2,95  | 0.20 | 0.38      | -2   | 2.5  |
| expect_inheritance                              | 3,180 | 0.12 | 0.33      | 0    | 1    |
| house_dynasty                                   | 3,21  | 0.26 | 0.44      | 0    | 1    |
| household_income                                | 2,59  | 7.43 | 0.47      | 5.99 | 8.41 |
| parents_dead                                    | 3,44  | 0.27 | 0.44      | 0    | 1    |
| children  | 3,15  | 0.72 | 0.45      | 0    | 1    |
| female  | 3,45  | 0.51 | 0.50      | 0    | 1    |
| care_in_family                                  | 3,21  | 0.41 | 0.49      | 0    | 1    |
| gave_care_personally                            | 3,19  | 0.29 | 0.45      | 0    | 1    |
| inheritance_increase_inequality                 | 3,02  | 0.75 | 0.44      | 0    | 1    |
| indirect_reciprocity                            | 3,28  | 0.23 | 0.42      | 0    | 1    |
| tax_overestimation                              | 2,68  | 0.56 | 0.50      | 0    | 1    |
| expect_timing                                   | 3,22  | 0.34 | 0.48      | 0    | 1    |
| trust_in_ government                            | 3,300 | 0.13 | 0.33      | 0    | 1    |
| parents_in_same_house                           | 3,44  | 0.13 | 0.33      | 0    | 1    |
| distance_to_parents_30_diriving_minutes_or_more | 3,44  | 0.25 | 0.43      | 0    | 1    |
| log_age   | 3,44  | 3.81 | 0.34      | 2.94 | 4.26 |
| married   | 3,45  | 0.59 | 0.49      | 0    | 1    |
| high_education                                  | 3,45  | 0.44 | 0.50      | 0    | 1    |
| received_inheritance                            | 3,18  | 0.35 | 0.48      | 0    | 1    |
| neuroticism                                     | 3,27  | 5.71 | 1.67      | 2    | 10   |
| extraversion                                    | 3,28  | 6.46 | 1.77      | 2    | 10   |
| openness to experience                          | 3,29  | 6.77 | 1.72      | 2    | 10   |
| agreeableness                                   | 3,27  | 6.20 | 1.42      | 2    | 10   |
| conscientiousness                               | 3,27  | 7.84 | 1.43      | 2    | 10   |

**Table 2: Basic regression models** 

| VARIABLES                                      | (1)                   | (2)                   | (3)                   | (4)                |
|--|-----------------------|-----------------------|-----------------------|--------------------|
| fair_care_exchange                             | -0.0315               | -0.0404               | -0.0938               | 0.0100             |
|  | (0.0713)              | (0.0736)              | (0.0897)              | (0.103)            |
| expect_care_exchange                           | -0.243**              | -0.270***             | -0.278***             | -0.267**           |
|  | (0.0951)              | (0.0987)              | (0.0991)              | (0.0988            |
| expect inheritance                             | 0.00223               | 0.00924               | 0.00591               | 0.00832            |
| · -  | (0.106)               | (0.108)               | (0.108)               | (0.108)            |
| house dynasty                                  | 0.202**               | 0.188**               | 0.192**               | 0.188*             |
| _ · ·  | (0.0830)              | (0.0857)              | (0.0858)              | (0.0857)           |
| household_income                               | 0.178**               | 0.174**               | 0.175**               | 0.171*             |
| _  | (0.0847)              | (0.0872)              | (0.0872)              | (0.0873            |
| parents_dead                                   | -0.216**              | -0.213**              | -0.215**              | -0.212*            |
|  | (0.103)               | (0.107)               | (0.107)               | (0.107             |
| children                                       | 0.227**               | 0.211**               | 0.210**               | 0.213*             |
|  | (0.0965)              | (0.100)               | (0.100)               | (0.100             |
| female   | 0.191***              | 0.197**               | 0.197**               | 0.270*             |
|  | (0.0719)              | (0.0791)              | (0.0791)              | (0.131             |
| care in family                                 | -0.0260               | -0.0278               | -0.0269               | -0.029             |
| care_in_laining                                | (0.0739)              | (0.0767)              | (0.0767)              | (0.0767)           |
| gave care personally                           | -0.0571               | -0.0420               | -0.159                | -0.043             |
| gave_care_personary                            | (0.0832)              | (0.0860)              | (0.142)               | (0.0860            |
| inheritance increase inequality                | -0.327***             | -0.291***             | -0.291***             | -0.291*            |
| inneritance_merease_mequanty                   | (0.0856)              | (0.0890)              | (0.0890)              | (0.0890            |
| indirect reciprocity                           | -0.0738               | -0.0555               | -0.0615               | -0.055             |
| muneet_leciprocity                             | (0.0864)              | (0.0891)              | (0.0893)              | (0.089)            |
| tax_overestimation                             | 0.168**               | 0.179**               | 0.180**               | 0.178*             |
| tax_overestimation                             | (0.0739)              | (0.0766)              | (0.0766)              | (0.076)            |
| evnect timing                                  | 0.0739)               | 0.0766)               | 0.127*                | 0.125              |
| expect_timing                                  | (0.0735)              | (0.0757)              | (0.0758)              | (0.0758            |
| trust in government                            | -0.214**              | -0.248**              | -0.251**              | -0.246*            |
| trust_iii_ government                          | (0.102)               | (0.107)               | (0.107)               | (0.107             |
| mananta in sama haysa                          | -0.327**              | -0.360***             | -0.362***             | -0.363*            |
| parents_in_same_house                          | (0.128)               |                       | (0.134)               |                    |
| distance to momente 20 deixing minutes on mone | -0.0676               | (0.134)               | ` /                   | (0.134             |
| distance_to_parents_30_driving_minutes_or_more |                       | -0.0783               | -0.0819               | -0.079             |
| 100.000  | (0.0948)<br>-1.043*** | (0.0985)<br>-1.067*** | (0.0986)<br>-1.068*** | (0.098:<br>-1.067* |
| log_age  |                       |                       |                       |                    |
|  | (0.164)               | (0.172)               | (0.172)               | (0.172             |
| married  | -0.0648               | -0.0812               | -0.0806               | -0.080             |
| 11.1   | (0.0835)              | (0.0866)              | (0.0866)<br>-0.362*** | (0.086)            |
| high_education                                 | -0.385***             | -0.362***             |                       | -0.362*            |
|  | (0.0787)              | (0.0817)              | (0.0817)              | (0.081)            |
| received_inheritance                           | -0.00636              | -0.0276               | -0.0284               | -0.026             |
| · · · · · · · · · · · · · · · · · · ·          | (0.0792)              | (0.0815)              | (0.0815)              | (0.081:            |
| neuroticism                                    |                       | -0.0360               | -0.0358               | -0.036             |
|  |                       | (0.0233)              | (0.0233)              | (0.0233            |
| extraversion                                   |                       | -0.00636              | -0.00656              | -0.0060            |
|  |                       | (0.0218)              | (0.0218)              | (0.0218            |
| openness to experience                         |                       | 0.0156                | 0.0147                | 0.0159             |
|  |                       | (0.0217)              | (0.0217)              | (0.021)            |
| agreeableness                                  |                       | -0.000742             | 0.000164              | -0.0011            |
|  |                       | (0.0259)              | (0.0259)              | (0.0259)           |
| conscientiousness                              |                       | 0.0727***             | 0.0741***             | 0.0727*            |
|  |                       | (0.0272)              | (0.0273)              | (0.0272)           |

gave\_care\_personallyl#fair\_care\_exchange 0.162 (0.155)-0.102 female#fair\_care\_exchange (0.146)2.668\*\*\* 2.677\*\*\* 2.976\*\*\* 2.699\*\*\* Constant (0.828)(0.912)(0.913)(0.911)pseudo-R<sup>2</sup> 0.0904 0.0975 0.0981 0.0978

174.47\*\*\*

1,393

177.52\*\*\*

1,313

178.61\*\*\*

1,313

178.00\*\*\*

1,313

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

χ²-Stat

Observations

**Table 3: Marginal effects** 

| VARIABLES                                       | (1)       | (2)       | (3)       | (4)       |
|---|-----------|-----------|-----------|-----------|
| fair_care_exchange                              | -0.011    | -0.014    | -0.015    | -0.013    |
|   | (0.0267)  | (0.026)   | (0.026)   | (0.026)   |
| expect_care_exchange                            | -0.088**  | -0.097*** | -0.099*** | -0.095*** |
|   | (0.034)   | (0.035)   | (0.035)   | (0.035)   |
| expect_inheritance                              | 0.0008    | 0.003     | 0.002     | 0.003     |
|   | (0.038)   | (0.039)   | (0.039)   | (0.039)   |
| house_dynasty                                   | 0.073**   | 0.067**   | 0.069**   | 0.067**   |
|   | (0.030)   | (0.031)   | (0.031)   | (0.031)   |
| household_income                                | 0.064**   | 0.062**   | 0.063**   | 0.061**   |
|   | (0.030)   | (0.031)   | (0.031)   | (0.031)   |
| parents_dead                                    | -0.079**  | -0.077**  | -0.078**  | -0.077**  |
|   | (0.038)   | (0.039)   | (0.039)   | (0.039)   |
| children  | 0.081**   | 0.075**   | 0.074**   | 0.076**   |
|   | (0.034)   | (0.035)   | (0.035)   | (0.035)   |
| female  | 0.069***  | 0.071**   | 0.071**   | 0.071**   |
|   | (0.026)   | (0.029)   | (0.029)   | (0.029)   |
| care in family                                  | -0.009    | -0.010    | -0.016    | -0.010    |
| ,   | (0.027)   | (0.027)   | (0.031)   | (0.027)   |
| gave care personally                            | -0.021    | -0.015    | -0.010    | -0.015    |
| 2 ,   | (0.030)   | (0.031)   | (0.027)   | (0.031)   |
| inheritance increase inequality                 | -0.118*** | -0.104*** | -0.104*** | -0.104**  |
| 1   | (0.030)   | (0.031)   | (0.031)   | (0.031)   |
| indirect_reciprocity                            | -0.027    | -0.020    | -0.022    | -0.020    |
| _ 1   | (0.031)   | (0.032)   | (0.032)   | (0.032)   |
| tax overestimation                              | 0.061**   | 0.065**   | 0.065**   | 0.064**   |
| <u>-</u>  | (0.027)   | (0.028)   | (0.028)   | (0.028)   |
| expect timing                                   | 0.055**   | 0.045*    | 0.045*    | 0.045*    |
|   | (0.026)   | (0.027)   | (0.027)   | (0.027)   |
| trust in government                             | -0.077**  | -0.089**  | -0.089**  | -0.088**  |
| u usin_ go · orimiono                           | (0.037)   | (0.038)   | (0.038)   | (0.038)   |
| parents_in_same_house                           | -0.116*** | -0.127*** | -0.128*** | -0.128**  |
| parente_in_ounte_neuse                          | (0.045)   | (0.046)   | (0.046)   | (0.046)   |
| listance_to_parents_30_diriving_minutes_or_more | -0.024    | -0.028    | -0.029    | -0.028    |
|   | (0.034)   | (0.035)   | (0.035)   | (0.035)   |
| log_age   | -0.376*** | -0.381*** | -0.381*** | -0.381**  |
|   | (0.056)   | (0.059)   | (0.059)   | (0.059)   |
| married   | -0.023    | -0.029    | -0.029    | -0.029    |
| manio   | (0.030)   | (0.031)   | (0.031)   | (0.031)   |
| high_education                                  | -0.138*** | -0.129*** | -0.129*** | -0.129**  |
| mgn_caacanton                                   | (0.028)   | (0.029)   | (0.029)   | (0.029)   |
| neuroticism                                     | (0.020)   | -0.013    | -0.013    | -0.013    |
| noutottotsin                                    |           | (0.008)   | (0.008)   | (0.008)   |
|   |           | (0.000)   | (0.000)   | (0.000)   |
| extraversion                                    |           | -0.002    | -0.002    | -0.002    |

| openness to experience | 0,0056   | 0,0053   | 0,0057   |
|------------------------|----------|----------|----------|
|                        | (0,008)  | (0,0088) | (0,008)  |
| agreeableness          | -0.0003  | 0.00006  | -0.0004  |
|                        | (0.009)  | (0.010)  | (0.009)  |
| conscientiousness      | 0.026*** | 0.026*** | 0.026*** |
|                        | (0.010)  | (0.010)  | (0.010)  |