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# Fair Inheritance Taxation in the Presence of Tax Planning

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## **Abstract**

This paper analyzes to what extent tax planning impacts on the level of the inheritance tax rate perceived as fair. In a factorial survey conducted in Germany it finds out that tax planning increases the fair tax rate by roughly 4 percentage points. The fair tax rate is not only determined by the size of the bequest, the relationship of the heir to the bequeather, and the type of bequest, but also by the perceived intentions of the bequeather. The families with social motives should be taxed less than those without. The paper looks for support in optimum-tax theory. To this end, it develops a simple model that shows that taxation should not prevent individuals with warm-glow-of-giving motives to contribute substantially more to the social good than individuals without these motives.

*JEL Classification:* H24, H21, H26

*Keywords:* Tax planning, inheritance tax, fair taxation, warm glow of giving

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# 1 Introduction

For many years and in many countries, the estate tax respectively the inheritance tax has been very controversial although its share in overall tax receipts is rather small. It has been denounced as immoral death tax that taxes wealth already taxed once or more often (“double tax”) (for a discussion of this exercise in rhetoric, see Gale and Slemrod, 2001; Prabhakar, 2008). In the sociological discourse on inheritance taxation, the tax is mainly justified on grounds of the principles of justice and equality of opportunity (see Beckert, 2008). But then, according to the family principle, inheritance taxes interfere in the unity of the family that could be considered as entity that outlives the deceased, and undermine family solidarity (see Kohli, 1999, 2004; Beckert, 2008). From an economist’s point of view, there is an equity-efficiency trade off involved (for an overview on the economic literature, see Cremer and Pestieau, 2006; Boadway, Chamberlain, and Emmerson, 2010; Kopczuk, 2013b). On the one hand, since wealth is increasingly unequally distributed, the distribution of wealth transfers is also strongly positively skewed, and administration of annual wealth tax is rather costly, the inheritance tax may be an important instrument to redistribute from the rich to the poor. On the other hand, the tax distorts savings of farsighted bequeathers and labor supply of heirs. According to the deterministic infinite-life model of Chamley (1986) and Judd (1985), the optimal capital income tax is zero in the long-run because a tax on capital income creates an ever growing distortion on inter-temporal choices. Atkinson and Stiglitz (1976) argued that a non-linear earnings tax is a more efficient tool for redistributions. However, recent research has shown that this negative results depend heavily on the restrictive model assumption. Piketty and Saez (2012) showed that the welfare-maximizing inheritance tax rate is positive and the more so the more bequests are concentrated and the larger the weight of those receiving little inheritance. Furthermore, it has long been recognized that the assessment of inheritance taxation depends strongly on bequest motives (see Cremer and Pestieau, 2006). While taxation of accidental bequests is non-distorting, this is not so with altruism or exchange motives. In particular, the economic literature has stressed that transfer taxes should internalize externalities from giving (see Kaplow, 2008, 2010; Kopczuk, 2013a).

In the public debate, there is a widespread feeling that it is relatively easy to avoid

or to evade the estate tax especially by the wealthiest families (Gale and Slemrod, 2001). One way to do this is to skip generations or to use trusts (Boadway, Chamberlain, and Emmerson, 2010). Kopczuk (2007) showed that the onset of a terminal illness leads to a significant reduction in the value of estates reported on tax returns reflecting tax planning. Although optimum tax theory has focused on asymmetric information regarding the ability of the taxpayer, most of the literature on wealth transfer taxation assumes that bequests are observable and that the estate tax can neither be avoided nor evaded. However, it has been shown that the zero-taxation result breaks down if wealth transfer is not observable (see Boadway, Marchand, and Pestieau, 2000; Cremer, Pestieau, and Rochet, 2003). Finally, although it is claimed that wealth transfer taxes impose intolerable burdens on family owned business, there is very little evidence for this damaging impact on small businesses (see Gale and Slemrod, 2001; Boadway, Chamberlain, and Emmerson, 2010).

This paper analyzes the effect of tax planning on the inheritance tax rate perceived as fair by the public in Germany and links the findings to an optimum-taxation model in the spirit of Diamond (2006). In Germany, inheritances but also inter-vivo-gifts are subject to taxation (for a brief overview, see Kessler and Eicke, 2009). Tax rates vary from 7% to 50% depending on the relationship between the bequeather and the heir and the value of the inheritance. Partners and children face the lowest tax rates, close relatives the second-lowest, others belong to the high-tax-rate category. Substantial personal allowances and further special allowances together with sharply increasing tax rates make the tax highly progressive. Business property is tax-exempted provided that the wage bill is not substantially reduced over a certain period of time. The transfer of a privately owned home to a partner or to children is also tax free up to some threshold. Because of a constitutional court ruling in 2007 and a major inheritance tax reform in 2009, the tax has been intensively discussed for a couple of years and the public is relatively aware of the tax rules. Due to the large allowances, in 2011 only 133624 transfers were effectively taxed, on average the tax liability was 31589€. The average tax rate, calculated as tax revenue over transfers in excess of any allowances and deductions, is 16.73%. 55% of tax revenue was gained from just 6% of tax payers with tax liability above 500000€ each (see Federal Statistical Office, 2012).

To analyze the effect of tax planning on the level of the inheritance tax rate that

is perceived as fair and appropriate we apply the factorial survey approach. Factorial surveys are a technique for applying experimental designs in survey research (see, e.g., Rossi and Anderson, 1982; Hox, Kreft, and Hermkens, 1991; Beck and Opp, 2001). It is particularly used to study determinants of positive beliefs and normative judgments. In our case, the respondents make judgments of fictive descriptions, which have been constructed by randomly selecting one level from one dimension, namely tax planning. They have to choose the fair inheritance tax a heir has to pay when she inherits a medium-sized company from her father where, under German tax law, the business property relief would apply. In one of the two vignettes, probably to benefit from the tax relief, the bequeather bought the firm when he discovered he would die soon, in the other vignette, the deceased owned the firm for many years. Our main result is the following: in a simple bivariate analysis, tax planning by the bequeather increases the tax rate perceived as fair by 3.75 percentage points. Controlling for family values and the judgment on public redistribution policy, the effect is even stronger (4.15 percentage points). In additional regressions, we control for various characteristics of the respondent but socio-demographic variables (age, gender, income level, education, country of birth, etc.) and experience with and expectations on bequests and inheritance tax do not systematically influence the assessment.

Furthermore, we show that the fairness consideration we discovered empirically has an equivalent in optimum-taxation theory. Optimum taxation does not prevent individuals with social motives to contribute substantially more to the social good than individuals with anti-social motives. However, depending on the strength of social motives and the welfare weights of individuals with and without social motives, the optimum tax relief is small or large.

The paper is organized as follows: Section 2 describes the factorial survey and presents the empirical results. Afterwards, section 3 links the findings to the theoretical literature on reciprocity in games and optimum taxation in the presence of a warm-glow-of-giving motive. Section 4 concludes.

## 2 The factorial survey

The data source of our study is the WISO-Panel which is an Online-Access Panel with more than 10000 registered users. It was founded at the University of Erlangen-Nuremberg and moved recently to the University of Freiburg. The study was conducted in September 2012 with 524 participants; it was part of a broader project on normative judgments on the inheritance tax. Although the panel population is heterogenous regarding various socio-demographic dimensions it is not fully representative for the German population. In our sample, the share of women (53%) is slightly larger than in the population, respondents are significantly younger and better educated; more than 51% are younger than 45 and 58% hold at least a degree from a higher secondary school. Some respondents data are provided by the panel organizer, most data are taken from our survey. Our survey included several questions on socio-demographics, on judgments on the government's role in redistribution, and on family values. However, the survey focused especially on the respondents experience and expectations with gifts, bequests, and the inheritance tax, and on the judgment on evasion and avoidance of the inheritance tax.

The vignette of interest here is quite simple because the description is varied only along one single dimension. The vignette started with the following sentence: "Please, indicate for the case described below how large the share of the inheritance that the person should pay as inheritance tax to the government should be." After the description we asked: "In your opinion, how large is the share of the inheritance the daughter of Mr. Müller should pay as inheritance tax to the government." The respondent could choose a number between 0 and 100 in increments of 5 (inheritance tax in percent). Hence, the interviewee was required to calculate the average tax rate for the gross transfer rather than the transfer net of all sorts of deductions.

The two vignettes are the following:

The no-tax-planning vignette: "For many years, Mr. Müller re-invested the money his medium-sized company with 20 employees made in the firm again. 2010 Mr. Müller contracted a terminal illness and died one year later. Mr. Müller passes the company worth 1 million euros on to his only daughter."

The tax-planning vignette: "For many years, as a high-income employee Mr. Müller put

money into bonds. 2010 Mr. Müller contracted a terminal illness. Thereupon, he bought a medium-sized company with 20 employees. One year later, Mr. Müller died. Mr. Müller passes the company worth 1 million euros on to his only daughter.”

While in the first vignette, the bequeather was always an entrepreneur, in the second vignette, he became the owner of the firm only after he discovered that he was terminally ill. In both vignettes, the company is of medium size and provides jobs for 20 employees. Some of the respondents probably know that, under German tax law, this kind of inheritance is practically tax free provided that the company provides jobs for additional ten years. The size of the inheritance is not negligible, it is clearly above the median, but it is also not extraordinarily big. The ability to pay of the heir as well as of the bequeather does not differ between vignettes. Furthermore, it is not likely that the former employee is more productive than the all-time entrepreneur.

The randomly selected members of the treatment group are shown the tax-planning vignette, the members of the control group were confronted with the no-tax-planning vignette. With respect to age, gender, employment status, education level, family values, refusal to answer, and experience with bequests and the inheritance tax, there are no systematic differences between the treatment and the control group. However, the members of the treatment group live in larger households and have on average more children (significant at the 10% level), the probability that they have not received any sizeable gift is slightly smaller and the probability that they earn high income is somewhat larger (significant at the 5% level).

Table 1: Summary statistics on the fair inheritance tax rate

vignette	mean	std. dev.	min	max	N
no tax planning	12.957	15.383	0	100	235
tax planning	16.709	17.054	0	95	234

On average, the respondents consider a tax rate of 14.83% as fair; the median tax rate is 10%. However, there is a substantial difference in the tax rate perceived as fair. Without taking any controls into account, tax planning by the bequeather increases the tax rate perceived as fair by 3.75 percentage points (see Table 1). The distributions of tax rates

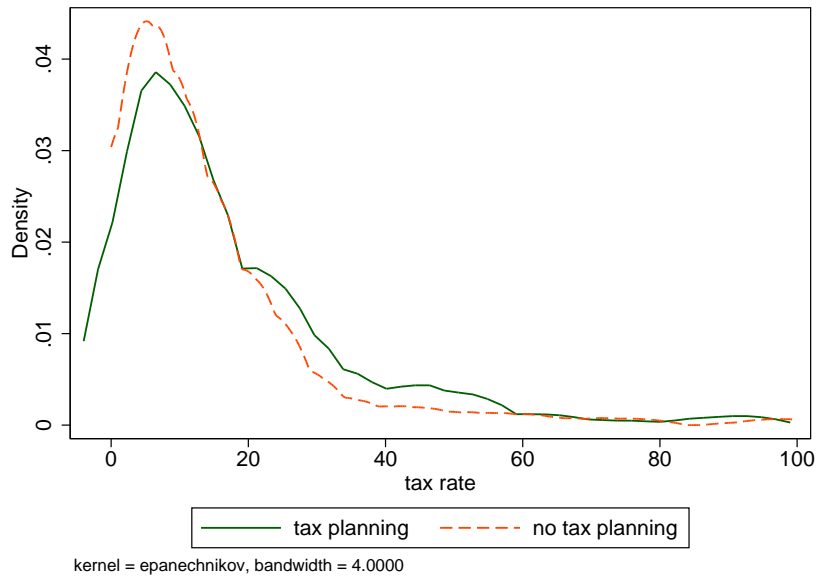


Figure 1: Kernel estimation of the inheritance tax rate perceived as fair with and without tax planning

differ (see Figure 1). With tax planning the respondents choose more often tax rates in the range of 20%-60%.

Controlling for family values and judgment on public redistribution policy, the effect of tax planning on the tax rate is even stronger (4.15 percentage points). Table 2 reports the results of a simple OLS regression.<sup>1</sup> The respondent is considered as being in favor of redistribution policy if he or she agrees with the statement “The government is responsible for equalization of income across income classes.” He holds strong family values if he or she agrees that relatives should support each other as it was exemplified by the ancestors. Not surprisingly, a positive attitude towards public redistribution policy increases the specified tax rate, strong family values lower it. However, the latter effect is less significant and also less stable across specifications. Calculating robust standard errors, statistical significance of the family value variable disappears (not shown here). Using other items related to

<sup>1</sup>A Tobit regression which takes left censoring into account, the results not shown here, leads to similar coefficients and significance levels. The upper bound seems not to be binding. Whereas 78 respondents choose a zero tax rate, only 1 interviewee prefers completely confiscatory taxation.



dependent variable	tax rate	tax rate
tax planning	4.146*** (1.497)	3.492** (1.620)
strong family values	-3.170* (1.888)	-4.073** (2.024)
in favor of redistribution	3.353** (1.523)	2.593 (1.669)
no gift so far		-1.182 (1.794)
high income		-2.538 (2.287)
size of household		0.0849 (0.404)
number of children in household		0.138 (1.141)
Constant	13.31*** (2.063)	15.99*** (2.673)
Observations	467	424
R-squared	0.030	0.029
Adjusted R-squared	0.0240	0.0131
F statistic	4.820	1.800

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

Table 2: OLS tax-rate regressions

family values or using a variable derived from factor analysis to measure family values, the sign of the coefficient of family values always remains negative but it is statistically insignificant.

We also analyze whether socio-demographics and experience with and expectations on bequests and inheritance tax payments make a difference. The answer is simply no. Age, gender, place of birth, household size, number of children, partnership, employment status, level of education, income level, inheritance or gifts in the past, expected inheritance, none of these variables has a significant effect on the tax rate once it is controlled for tax planning, the attitude towards redistribution, and family values. As a robustness check, we include in one regression only those socio-demographic variables that show significant differences between treatment and control group (see second column in Table 2). The adjusted R-squared is substantially lower, the F statistic deteriorates, and the tax-planning dummy is smaller again but still positive as well as statistically and economically significant. Probably due to the inclusion of the high-income dummy, the attitude towards

redistribution becomes insignificant. For robust standard errors, family values are also insignificant. To summarize, tax planning is the only variable that has stable influence on the tax rate perceived as fair.

From our experiment, we conclude the following: First, a zero inheritance tax rate for business property is considered as fair only by a small minority of respondents. Compared with the German tax law, the median and the mean tax rate are rather high in our sample. Taking allowances into account, in Germany, a child faces a tax rate of 15% calculated for the taxable transfer if she inherits money or securities worth 1 Million Euros. If the tax rate were calculated for the gross transfer as in our experiment, it would be only 8%. But in our experiment, the heir inherits business property which is effectively untaxed under German tax law. Second, our experiment shows that the fair tax rate is not only determined by the size of the bequest, the relationship of the heir to the bequeather, and the type of bequest. Intentions of the bequeather and history also matter. If the bequest is designed as to manipulate tax liability, the tax rate perceived as fair is higher than otherwise. To account for tax planning, there are essentially two alternative routes for tax policy. Either the government sets the tax rate equal to a weighted average of the fair tax rates in the absence and presence of tax planning, or additional available information is taken into account to correct the tax rate – in our case the duration of ownership prior to the transfer. Since our experiment does not include a treatment group that was asked to determine tax rates for both cases simultaneously, we do not know whether a uniform tax rate or ownership-duration dependency of tax rates is the preferred policy in our sample population.

### **3 Taxing anti-social motives**

One explanation of our finding is that the respondents consider tax planning as a violation of social norms that recognize the obligation to pay taxes. However, there is some evidence that, although tax evasion is perceived negatively, tax avoidance is assessed positively (Kirchler, Maciejovsky, and Schneider, 2003) which suggests that tax planning as such is not considered as offense against social norms. But, in our experiment, the bequeather exploits the business property relief, which is associated with the provision of a social good,

rather than some arbitrary difference in tax rates. The exemption of business property from inheritance tax in many countries (see, e.g., Boadway, Chamberlain, and Emmerson, 2010; Kessler and Eicke, 2009) is usually justified on the ground that it promotes enterprise and safeguards domestic jobs by providing continuity of the business. Taking for granted that business property involves positive externalities, it should be subsidized. Since the externality is caused by the existence of the enterprise rather than the wealth transfer, transfer tax reliefs should only prevent business being split up or closed. Taking the externality argument seriously, the subsidy should not be affected by tax planning, because, at least in our experiment, tax planning does not impact on the existence and the future of the company. However, the objectives of the two types of bequeathers are different: In the tax-planning vignette, the entrepreneur-turned-manager presumably provides benefits to society because he expects some tax reduction in return, whereas, in the no-tax-planning vignette, the entrepreneur is intrinsically motivated to run a business and to maintain jobs.

Provided that the intention of the bequeather makes indeed the difference between the two vignettes, our experiment leads to the conclusion that fair taxes should be adjusted in some way or another to motives of taxpayers. Taxpayers willing to provide a social good should be taxed less. It should be stressed that this conclusion relies on the assumption that, in accordance with the family principle (Beckert, 2008), respondents consider the family as entity; they hold individuals responsible for the behavior of family members namely, in the experiment, the taxpayer for the behavior of her father. The inverse relationship between motives and taxes could be related to several strands of literature. First, from the literature on reciprocity in various games, it is well understood that the willingness to reward or punish other players depends on both outcome and intentions (for an overview, see Fehr and Gächter, 2000; Falk and Fischbacher, 2006). There is a desire to punish hostile intentions and to reward kind intentions (see, e.g., Rabin, 1993). The higher tax rate in the tax-planning vignette could be seen as a punishment. Second, the result could be related to the literature on the tax treatment of charitable contributions with warm-glow preferences. Focussing on the interaction between an optimal non-linear income tax and donations to finance public goods, Diamond (2006) discussed the benefits of subsidizing donations. He stressed two potential gains: First, higher donations from high-income earners than low-income earners relax the incentive-compatibility constraint. Second, private

donations reduce consumption and, therefore, ease the resource constraint. Depending on whether social welfare does or does not include warm-glow utility, the subsidy should vary a little or a lot across types of taxpayers.

To justify the preferential treatment of intrinsically motivated persons without referring to corresponding productivity differences, we consider a simple endowment economy of two types, one without the other with warm-glow preferences, and two goods, one private and one public good. Individual  $i$ ,  $i = A, B$ , consumes private good  $x_i$  and contributes  $y_i$  to the public good. The economy is populated by  $n_i$  individuals of type  $i$ . Total endowment of the private good and the amount of the public good are fixed:

$$x = n_A x_A + n_B x_B \quad \text{and} \quad y = n_A y_A + n_B y_B. \quad (1)$$

Strictly quasi-concave utility of individual  $i$ ,  $u_i$ , depends positively on private consumption,  $x_i$ , and negatively on individual contribution,  $y_i$ . To model the warm-glow-of-giving motive of type  $B$ ,  $z_B$ , with  $z_i = y_i$ ,  $i = A, B$ , is included as additional argument in  $B$ 's utility function:  $u^A(x_A, y_A)$  and  $u^B(x_B, y_B, z_B)$ . It is assumed, that social welfare  $W$  depends on individual utility:  $W(u^A, u^B)$ , that is, it respects individual preferences. We consider only those allocations that treat all individuals of the same type equally. The first-best is obviously given by

$$-\frac{u_y^A}{u_x^A} = -\frac{u_y^B + u_z^B}{u_x^B}, \quad (2)$$

where subscripts indicate partial derivatives with  $u_x^i > 0$ ,  $u_y^i < 0$ , and  $u_z^B > 0$ . Note that in the interior  $u_y^B + u_z^B < 0$ . The marginal willingness to accept additional contributions must be the same for both types of individuals.

If nested utility is assumed, i.e.,

$$u^B(x_B, y_B, z_B) = v[u^A(x_B, y_B), z_B], \quad (3)$$

the first-best condition implies

$$-\frac{u_y^A}{u_x^A} < -\frac{\tilde{u}_y^A}{\tilde{u}_x^A}, \quad (4)$$

where  $\tilde{u}$  indicates utility from mimicking:  $\tilde{u}^A = u^A(x_B, y_B)$ . In a first-best solution, the willingness to accept additional contributions of type  $A$  is smaller than it would be if

the individual mimicked the other type. The bundle for the type with warm-glow preferences must provide for the type without warm-glow preferences a larger compensation for additional contributions. Note that this condition immediately implies that a uniform distribution of consumption goods and contributions across all individuals is not first-best optimal. Starting at perfect symmetry, it would be efficient to increase consumption and contributions of the warm-glow-preference type at the expense of the other type.

If the government cannot observe the individual's type, mimicking must be excluded. The incentive compatibility constraints are

$$u^A(x_A, y_A) \geq u^A(x_B, y_B) \quad \text{and} \quad u^B(x_B, y_B, z_B) \geq u^B(x_A, y_A, z_A). \quad (5)$$

For nested utility, Equation (3), simultaneous fulfillment of both incentive compatibility conditions requires  $z_B > z_A$ . The warm-glow-preference type must contribute more to the social good than the other type. Maximizing welfare  $W$  subject to the feasibility constraints, Equation (1), and the incentive compatibility constraints, Equation (5), and assuming that only the incentive compatibility constraint for the type without warm-glow preferences is strictly binding, yields the following first-order condition for an interior second-best optimum:

$$-\frac{u_y^A}{u_x^A} = -\frac{u_y^B + u_z^B - \frac{\mu_A}{W_{u_B}} \tilde{u}_y^A}{u_x^B - \frac{\mu_A}{W_{u_B}} \tilde{u}_x^A}, \quad (6)$$

where  $\mu_A$  is the Lagrange multiplier of the incentive compatibility constraint of type  $A$ . A similar condition holds if the other incentive compatibility constraint binds. If type  $A$  is the potential mimicker, he must be distracted from the bundle for type  $B$  which could be done by letting type  $B$  contribute a lot to the social good.

To illustrate these conditions, we show in Figure 2 first-best and second-best-optima for a numerical example with nested utility:  $u^A(x_A, y_A) = x_A^{1/2}(\bar{y} - y_A)^{1/2}$  and  $u^B(x_B, y_B, z_B) = x_B^{1/2}(\bar{y} - y_B)^{1/2}z_B^{1/3}$ , with  $z_B = y_B$ . The parameters are  $x = 100, y = 50, \bar{y} = 60$ , and  $n_A = n_B = 1$ . Type  $A$  most preferred choice is the upper-left corner, due to the warm-glow-of-giving motive, type  $B$  would prefer to contribute something to the social good. First-best and second-best optima are below the main diagonal:  $x_A/x + y_A/y < 1$ . Type  $A$  has a smaller share in total activities than type  $B$ . In the first-best optimum, shown in the left diagram, for almost all weight schemes in the welfare function,  $A$  contributes less

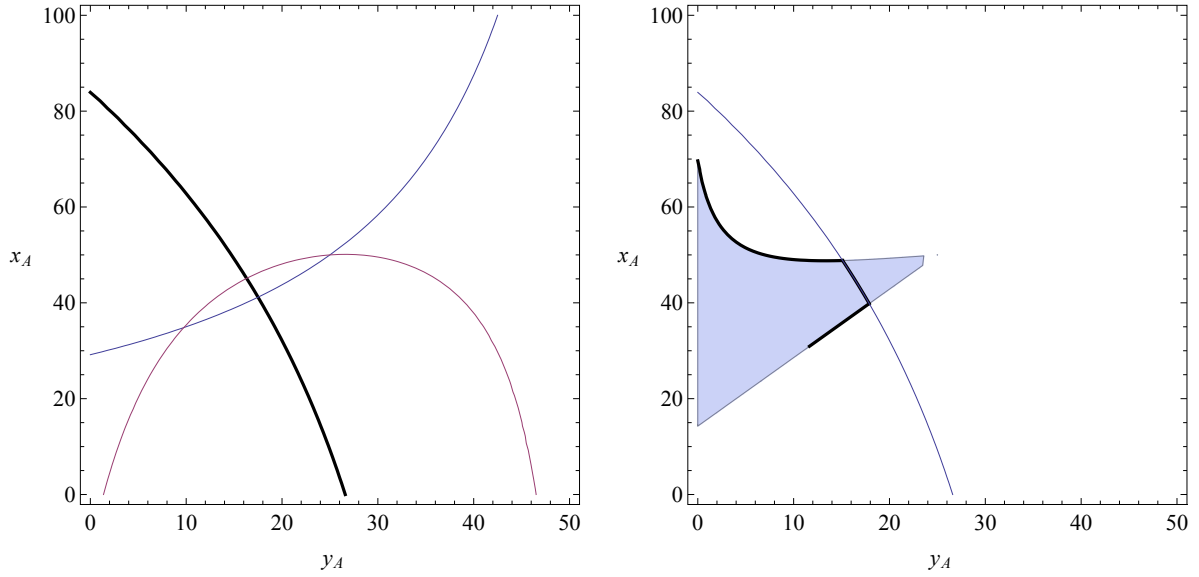


Figure 2: First-best optima with indifference curves for symmetric treatment (left), and second-best optima with no-mimicking regions and contract curve (right)

than type  $B$  to the social good. Only if the welfare function attaches great importance to type  $B$ , type  $A$  must contribute more. The set of second-best optima, indicated by the thick curve in the right diagram, contains non-distorted allocations, but also distorted allocations where either of the incentive compatibility constraint is strictly binding. If the risk of mimicking is affecting the optimum, it moves it to the left. Type  $A$  contributes less to the social good than in the first-best optimum. However, if type  $A$  had high weight in the social welfare function, he would get a large share of the consumption good.

Translated into the tax problem, the model suggests that taxation should not prevent individuals with social motives to contribute substantially more to the social good than individuals with anti-social motives. Mimicking is less rewarding if tax reliefs require a large contribution to the public good. Additional requirements for business property reliefs like the minimum holding period should be sufficiently strong. Depending on the welfare weights of individuals with and without social motives, the reduction of the tax liability should small or large.

## 4 Concluding remarks

Using a factorial survey conducted in Germany, this paper discovered that tax planning increases substantially the inheritance tax rate perceived as fair. It concluded that the fair tax rate is not only determined by the size of the bequest, the relationship of the heir to the bequeather, and the type of bequest, but also by the intentions of the bequeather. The families with social motives should be taxed less than those without. It also looked for support for this finding in optimum-tax theory. Using a simple model, it showed that taxation should not prevent individuals with warm-glow-of-giving motives to contribute substantially more to the social good than individuals without these motives.

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