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DISCUSSION PAPER **27**-2017

OPTIMAL TAXATION UNDER DIFFERENT CONCEPTS OF JUSTNESS

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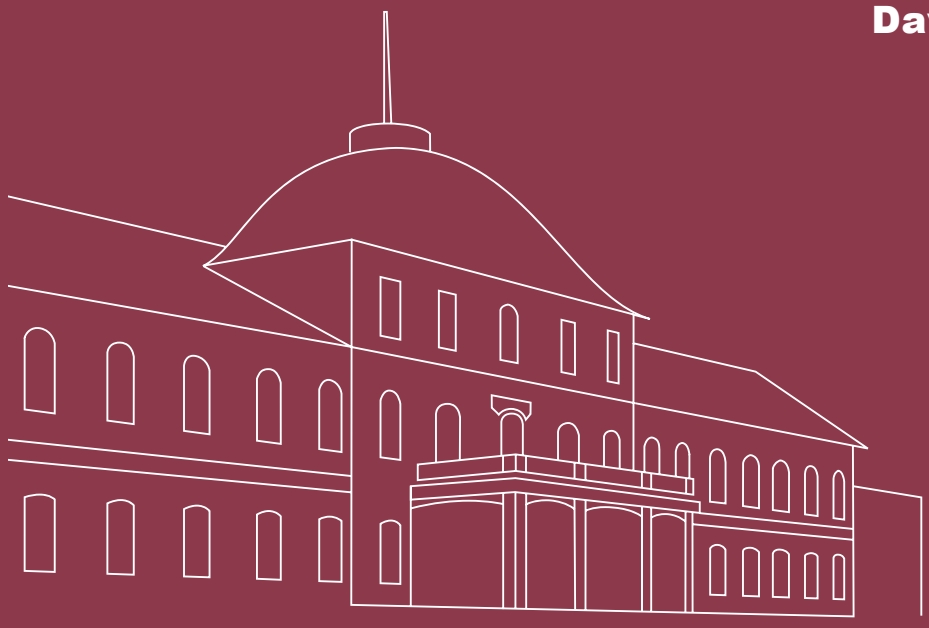

State: September 2017

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Discussion Paper 27-2017

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Research Area "INEPA – Inequality and Economic Policy Analysis"

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ISSN 2364-2084

Optimal Taxation Under Different Concepts of Justness*

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September 13, 2017

Abstract

A common assumption in the optimal taxation literature is that the social planner maximizes a welfarist social welfare function with weights decreasing with income. However, high transfer withdrawal rates in many countries imply very low weights for the working poor in practice. We reconcile this puzzle by generalizing the optimal taxation framework by Saez (2002) to allow for alternatives to welfarism. We calculate weights of a social planner's function as implied by the German tax and transfer system based on the concepts of welfarism, minimum absolute and relative sacrifice, as well as subjective justness. For the latter we use a novel question from the German Socio-Economic Panel. We find that the *minimum absolute sacrifice principle* is in line with social weights that decline with net income. Absolute subjective justness is roughly in line with decreasing social weights, which is reflected by preferences of men, West Germans, and supporters of the grand coalition parties.

Keywords Justness · Optimal Taxation · Income Redistribution · Equal Sacrifice · Inequality · Subjective Preferences

JEL Classification D63 · D60 · H21 · H23 · I38

*We thank Richard Blundell, Katherine Cuff, Nadja Dwenger, Aart Gerritsen, Peter Haan, Bas Jacobs, Johannes König, Carsten Schröder, Viktor Steiner, Matthew Weinzierl, and seminar participants at Freie Universität Berlin, DIW Berlin, Universität Hohenheim, the 13th Meeting of the Society for Social Choice and Welfare, the 72nd Annual Congress of the International Institute of Public Finance, and the AEA Annual Meeting 2017 for valuable comments. Program codes that generated all results in this paper are available on the authors' websites. This research contributes to the research area on Inequality and Economic Policy Analysis (INEPA) at Universität Hohenheim. The usual disclaimer applies.

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1 Introduction

Optimal taxation is only relevant if it is able to capture the actual aims of the social planner. Therefore, we extend a standard optimal taxation model to reconcile it with observed tax transfer practices. The standard approach in the welfarist optimal taxation literature is to assume that social weights decrease with income (e.g., Saez 2001, 2002; Blundell et al. 2009) because this pattern lies within the bounds confined by the two extreme cases of Rawlsian and Benthamite objective functions. Intuitively, the hypothesis of decreasing welfarist weights expresses the idea that the social planner values an increase of net income of the poor by one Euro more than an increase of net income of higher income groups by one Euro. Saez and Stantcheva (2016) describe welfarism with decreasing weights as one of their two polar cases of interest. In contrast, tax transfer systems in many countries can only be optimal if the social planner had chosen weights in a non-decreasing way.[1] As we show, a major reason for this lies in high transfer withdrawal rates for the working poor.[2]

In this paper, we generalize the optimal taxation framework by Saez (2002) to divert from welfarism. In an exercise of positive optimal taxation, we calculate the social weights under different concepts of justness. First, we apply the standard welfarist concept. Second, we apply the concept of minimum sacrifice and, third, a concept based on subjectively just net incomes. This third concept utilizes a novel question in the German Socio-Economic Panel: respondents state what net income they would consider just.[3] We term the latter concept *subjective justness*. We find that the minimum absolute sacrifice principle is in line with decreasing social weights.

Our paper is related to studies analyzing optimal taxation when the preferences of the social planner and individuals differ (Blomquist and Micheletto 2006; Kanbur et al. 2006). Gerritsen (2016) derives the optimal tax schedule for a government that optimizes a weighted sum of subjective well-being, while individuals maximize utility instead of well-being. He expresses the tax-schedule in terms of sufficient statistics in a continuous framework. In contrast, we use the discrete sufficient statistics framework that allows for labor supply adjustments at the intensive and at the extensive margin following Saez (2002). Our paper is further related to studies, where the

[1] Appendix A reviews a number of studies with this finding.

[2] Lockwood (2016) shows that under present bias and with job search, optimal marginal tax rates are even lower than conventionally calculated. This might be especially relevant for marginal tax rates for the working poor.

[3] We use respondents who consider their current gross income as just. Thus, just net incomes can be interpreted conditional on given gross incomes.

social planner maximizes an objective function that is related to ideas of fairness that differ from welfarism. An example is Ooghe and Peichl (2015), where the social planner aims at compensating individuals for differences in abilities but not for differences in taste.

The first main contribution of our paper is a generalization of the Saez (2002) model to non-welfarist aims of the social planner. To our knowledge, we are the first to derive the general optimal taxation schedule in this framework. In a recent study, Saez and Stantcheva (2016) propose generalized marginal welfare weights that may depend on characteristics that do not enter utility.[4] In contrast, in our approach, the social planner maximizes an objective function that allows for non-welfarist concepts of justice. The approach in our paper offers the advantage that we can directly quantify the value the social planner puts on a marginal improvement in a specific justness criterion for a given group compared to other groups. Thus, we can show which criterion is in line with social weights that decrease with income.

The second main contribution is the operationalization of two specific ideas of justice: minimum sacrifice and subjective justness. Minimum sacrifice is related to the equal sacrifice principle (see Mill 1871; Musgrave and Musgrave 1973; Richter 1983; Young 1988), which stipulates that all individuals should suffer the same 'sacrifice' through taxes. The sacrifice is usually defined as the burden of taxes in terms of utility. Evidence that the equal sacrifice concept is likely to capture the preferences of a majority is only documented for the U.S: Weinzierl (2014) shows in a survey that around 60 percent preferred the equal sacrifice tax schedule to a welfarist optimal tax schedule. While equal sacrifice equalizes the sacrifice due to taxes across a population, minimum sacrifice minimizes the (weigthed) sum of these utility losses. The concept of minimum sacrifice is very close to the libertarian concept studied in Saez and Stantcheva (2016).[5]

The second approach, subjective just income, is novel as we use new questions from the German Socio-Economic Panel to measure the perceived justness of gross and net incomes. These survey questions are representative for the working population in Germany. To the best of our knowledge, we are the first to use such a rich assessment of subjective preferences for just taxation in an optimal taxation framework. We analyze the social weights implied by subjective justness for subgroups of the population that might adhere to different concepts of justness: females and males, East Germans and West Germans who lived under different political systems for more than

[4] Similar to Saez and Stantcheva (2016), we take society's preferences as given and do not analyze how they could arise through the political process.

[5] Saez and Stantcheva (2016) allow for *welfarist* weights to increase with the amount of taxes paid. Thus decreasing taxes for those with a high tax burden is a high priority for the social planner.

a generation, as well as supporters of different political parties. The third main contribution is the application to the German tax and transfer system, as of 2015, for which we estimate the labor supply elasticities using microsimulation and a structural labor supply model.

Our main result is that the concept of *minimum sacrifice* is in line with positive, declining social weights. The explanation for this finding is that the marginal sacrifice increases with the amount of taxes paid and the working poor pay only a low amount of taxes. Although the costs of redistributing a Euro to this group are relatively small, the reduction in sacrifice is small too. In contrast, the increase in utility is high in the welfarist case. A second finding is a confirmation of previous studies: the welfarist approach implies very low weights for the working poor under the 2015 German tax and transfer system. Finally, we find that the German tax and transfer system is roughly in line with the minimization of absolute deviations from subjective just net incomes and decreasing social weights. This suggests that most people have a subjective concept of justness in mind that is equal or similar to minimum sacrifice.

The next section introduces our optimal taxation model for different concepts of justness, Section 3 describes how we calculate actual and just incomes as well as how we estimate extensive and intensive labor supply elasticities for Germany. In Section 4, we describe the resulting weights for different concepts of justness, while Section 5 concludes.

2 A Model of Optimal Taxation for Concepts of Justness

2.1 The General Framework

We generalize the canonical model by Saez (2002), which combines the pioneering work by Mirrlees (1971) and Diamond (1980), beyond utilitarian social welfare functions. See Appendix B for a formal derivation. The key difference between Saez (2002) model and our generalization is that in Saez (2002) the social planner maximizes the weighted sum of utility. The main advantage of our approach is that we allow for the social planner to maximize the weighted sum of 'justness functions' f_i. These functions can depend on various variables and incorporate different concepts of justness. We show that welfarism as in Saez (2002) is a special case.

Net income equals consumption and is given by $c_i = y_i - T_i$, where $i = 0, ..., I$ income groups

are defined through gross income y_i.[6] T_i denotes total taxes paid by the individual to finance a public good G. Each income group has the share h_i of the total population. These shares are endogenous as individuals adjust their labor supply to the tax-transfer system. The social planer chooses tax liabilities T_i to optimize a weighted sum L based on individual justness functions f_i (described in Subsection 2.2), which may depend on c_i or on other factors that do not enter the utility function of individuals. The optimization is subject to the government budget constraint:

$$L = \sum_{i=0}^{I} \mu_i h_i f_i \quad \text{s.t.} \quad \sum_{i=0}^{I} h_i T_i = G, \tag{1}$$

where μ_i are the primitive social weights associated with the income level of group i.[7] Together with the Lagrange multiplier λ, they define the explicit weights $e_i \equiv \frac{\mu_i}{\lambda}$, which we focus on in this study.[8] It is important to note that our approach does not require explicit utility functions but nests the welfarist approach as a special case. Following Saez (2002), we consider the benchmark case with no income effects, where $\sum_{i=0}^{I} \partial h_j / \partial c_i = 0$. Summing the first order conditions (equation (14) in the appendix) over all $i = 0, \ldots, I$ we obtain the normalization of weights such that:[9]

$$\sum_{i=0}^{I} h_i e_i \frac{\partial f_i}{\partial c_i} = 1. \tag{2}$$

Following Saez (2002), we assume that labor supply adjustment is restricted to intensive changes to "neighbor" income groups and extensive changes out of the labor force. Thus h_i depends only on differences in after-tax income between "neighbor groups" $(c_{i+1} - c_i,\ c_i - c_{i-1})$ and differences between group i and the non-working group $(c_i - c_0)$. The intensive mobility elasticity is

$$\zeta_i = \frac{c_i - c_{i-1}}{h_i} \frac{\partial h_i}{\partial (c_i - c_{i-1})} \tag{3}$$

[6]The number of income groups is assumed to be fixed. In the empirical application, we define groups $1, .., I$ as quintiles of the gross income distribution. Bargain et al. (2014) show that changing the cut-off points does not affect the results substantially.

[7]Positive values of μ_i imply that the social planner aims at 'improving' f_i.

[8]For welfarist applications it is common in the literature to report implicit weights, $g_i \equiv e_i \frac{\partial f_i}{\partial c_i}$, which offers the advantage to remain agnostic about utility functions. In the standard welfarist approach, implicit weights are defined as the product of the explicit weights and the marginal utility of consumption, $g_i \equiv e_i \frac{\partial u(c_{i^*}, i^*)}{\partial c_i}$. We calculate *relative* social welfare weights e_i/e_0 as in Blundell et al. (2009). As will be made clear, relative explicit social welfare weights equal relative implicit weights under the welfarist approach with neither income effects nor preference heterogeneity. Thus, social weights of all approaches are comparable.

[9]In the welfarist approach, this normalization reduces to the corresponding equation in Saez (2002): $\sum_{i=0}^{I} h_i g_i = 1$.

and the extensive elasticity is given by

$$\eta_i = \frac{c_i - c_0}{h_i} \frac{\partial h_i}{\partial (c_i - c_0)}. \tag{4}$$

The main result is that the optimal tax formula for group i expressed in terms of the participation elasticities η_j and the intensive elasticity ζ_i is

$$\begin{aligned} \frac{T_i - T_{i-1}}{c_i - c_{i-1}} &= \frac{1}{\zeta_i h_i} \Bigg\{ \sum_{j=i}^{I} \left[1 - e_j \frac{\partial f_j}{\partial c_j} - \eta_j \frac{T_j - T_0}{c_j - c_0} \right] h_j \\ &\quad - (e_i f_i - e_{i-1} f_{i-1}) \zeta_i \frac{h_i}{c_i - c_{i-1}} - \sum_{j=i}^{I} \eta_j \frac{e_j f_j - e_0 f_0}{c_j - c_0} h_j \Bigg\}. \end{aligned} \tag{5}$$

Multiplying equation (5) with $\zeta_i h_i dT$ clarifies the intuition of the optimal tax formula. Consider an increase of dT in all T_j for income groups $j = i, i+1, ...I$. The left hand side shows the negative effect on tax revenue due to individuals switching from job i to $i-1$.[10] At the optimum, this must equal the mechanical tax gains, which are valued at $\sum_{j=i}^{I} \left(1 - e_j \frac{\partial f_j}{\partial c_j}\right)$, minus tax losses due to individuals moving to group 0, $\sum_{j=i}^{I} \eta_j \frac{T_j - T_0}{c_j - c_0} h_j$, and the effect on the objective function of individuals moving into different jobs due to the tax increase, captured by the second line of the equation. The first term in the second line captures the effect of individuals moving from group i to $i-1$ and the second term captures the effect of individuals adjusting at the extensive margin.

The main difference between equation (17) and the mixed model in Saez (2002) is the second line, which does not appear in Saez (2002). While in the welfarist approach, changes due to behavioral responses drop out due to the envelope theorem, in our approach we consider changes in the justness function, which may change non-negligibly with a change in behavior. The second difference is that we replace the implicit weights $g_j = e_j \frac{\partial u(c_{j^*}, j^*)}{\partial c_j}$ with $e_j \frac{\partial f_j}{\partial c_j}$. The optimal tax schedule in Saez (2002) depends on elasticities and weights g_j, whereas in the generalized model, they additionally depend on the justness functions f_j.

The system of equations defining the optimal tax schedule consists of I equations like (5) and equation (2). In our application, we use the 2015 German tax system, i.e. we calculate the actual tax liability T_i of each income group, and solve for $e_1, ..., e_I$. Alternatively, one could assume justness weights and calculate the optimal tax schedule that maximizes equation (1) (as done in Appendix D).

[10] Due to the assumption of no income effects and because the differences in net income between groups $i, i+1, ...I$ are unchanged, groups $i+1, i+2, ...I$ will only adjust at the extensive margin.

2.2 Operationalization of Justness Concepts

The key advantage of our approach is that the justness function can be defined very generally, thus allowing us to capture a broader set of concepts of justness than the standard approach. In principle, the function can depend on individual and aggregate variables. The variables included in the justness function determine the dimensions along which the social planner considers a redistribution to be just. These variables do not need to be included in the utility function. For instance, utility is defined on after-tax income c_i and the choice of income group i in the standard welfarist approach. Our approach allows considering non-welfarist concepts of justness that rely, e.g., on before-tax income y_i.

Our approach nests the welfarist approach with quasilinear preferences.[11] This special case is given if

$$f_i = u(c_i, i) = v(i) + b \times c_i, \tag{6}$$

where $v(i)$ denotes the disutility of work in income group i and $b \times c_i$ is the linear utility of consumption. By introducing a general justness function f_i, we may operationalize other moral judgments that depend directly on variables that do not enter the utility function as in the concept of *minimum sacrifice*. We operationalize two forms of minimum sacrifice: Minimum absolute sacrifice based on the absolute tax liability and relative minimum sacrifice based on the tax liability relative to the net income.

Sacrifice is defined as the difference in utility derived from net income and the hypothetical utility derived from gross income, i.e., if there were no taxes:

$$\text{Sacrifice} = u(y_i) - u(c_i). \tag{7}$$

We focus on the case of quasi-linear preferences, see equation (6), and assume, *without loss of generality*, that $b = 1$, so the sacrifice simplifies to $y_i - c_i$. We formulate a loss function that captures the penalty to the objective function of the social planner if individuals pay taxes, i.e., if there is a positive sacrifice. This loss function is the justness function associated with minimum sacrifice.

[11] The absence of income effects, i.e. the assumption of quasi-linear preferences, is common in the optimal taxation literature following Saez (2002). In this case relative explicit welfare weights equal relative implicit welfare weights: $\frac{\partial f_j}{\partial c_j} = b$ cancels out, i.e, $\frac{g_i}{g_0} = \frac{e_i}{e_0} \frac{\partial u(c_{i^*}, i^*)/\partial c_i}{\partial u(c_{0^*}, 0^*)/\partial c_0} = \frac{e_i}{e_0}$.

In the case of minimum *absolute* sacrifice the loss that captures deviations of c_i from gross income y_i is determined by the parameters γ, α, and δ:[12]

$$\begin{aligned} f_i &= -(y_i - c_i)^{\gamma} \text{ if } y_i > c_i, \\ f_i &= \alpha(c_i - y_i)^{\delta} \text{ if } c_i > y_i, \\ \gamma &> 1, 0 \leq \alpha \leq 1, \delta \leq 1. \end{aligned} \tag{8}$$

The first line gives the penalty of paid taxes. $\gamma > 1$ implies that the penalty increases more than proportionally with the amount of taxes paid. The second line captures the gains if individuals receive transfers. If δ is smaller than one, the marginal benefits of transfers are decreasing. The parameter α scales the gains relative to sacrifices. A positive α guarantees Pareto optimality if weights e_i are positive, as it guarantees that f_i increases with increases of c_i. With positive e_i, the social planner never chooses points on the right hand side of the Laffer curve (which are not Pareto optimal).[13] This justness function respects two properties of minimum sacrifice. First, losses from negative deviations from zero sacrifice, i.e., from positive tax liabilities, increase more than proportionally with the size of the deviation. Second, positive deviations, i.e., transfers, of the same size do not offset these losses.[14] In our empirical application, we set γ to two and δ and α to one. The latter two parameters affect mainly the unemployed, the only group that receives net transfers in our application and thus has a 'positive sacrifice'. The aim of this paper is to show which concepts of justness are in line with declining social weights under a reasonable calibration. Therefore, investigating how results change in a wide variety of calibrations is not particularly insightful. However, we have experimented with alternative values for α. Smaller values increase the social weight of the unemployed and keep the weights of the other groups relative to one another virtually unchanged.[15]

Similarly, we also consider minimum *relative* sacrifice where the function includes deviations

[12] We leave for future research empirical identification of penalty functions. Note however, that this is only possible if the social weights are known.

[13] Starting from a point on the right-hand side of the Laffer curve for group i, improvements in the objective function of the social planner are possible by decreasing taxes T_i. This would increase f_i and increase tax revenues. This would, in turn, allow reducing taxes for some other group $j \neq i$. This increase in the objective function of the social planner would be a Pareto improvement as long as individual utility increases with net income.

[14] As noted in Weinzierl (2014), this is consistent with loss aversion (Kahneman and Tversky 1979).

[15] See Appendix F for variations of δ and γ.

of consumption c_i from gross income y_i relative to the level of consumption such that

$$\begin{aligned} f_i &= -\left(\frac{y_i - c_i}{c_i}\right)^{\gamma} \text{ if } y_i > c_i, \\ f_i &= \alpha\left(\frac{c_i - y_i}{c_i}\right)^{\delta} \text{ if } c_i > y_i, \\ \gamma &> 1, 0 \leq \alpha \leq 1, \delta \leq 1. \end{aligned} \tag{9}$$

A major advantage of our study is that we have observations of individual just levels of after-tax income for given gross incomes that are representative for the working population in Germany. Our framework allows using this information in the optimal tax formulae. We specify the justness functions similarly to the case of minimum sacrifice and set as reference point the level of just after-tax income taken from the survey. Thus the absolute formulation of the justness function is

$$\begin{aligned} f_i &= -(c_i^{\text{just}} - c_i)^{\gamma} \text{ if } c_i^{\text{just}} > c_i, \\ f_i &= \alpha(c_i - c_i^{\text{just}})^{\delta} \text{ if } c_i > c_i^{\text{just}}, \\ \gamma &> 1, 0 \leq \alpha \leq 1, \delta \leq 1 \end{aligned} \tag{10}$$

and the relative one is

$$\begin{aligned} f_i &= -\left(\frac{c_i^{\text{just}} - c_i}{c_i}\right)^{\gamma} \text{ if } c_i^{\text{just}} > c_i, \\ f_i &= \alpha\left(\frac{c_i - c_i^{\text{just}}}{c_i}\right)^{\delta} \text{ if } c_i > c_i^{\text{just}}, \\ \gamma &> 1, 0 \leq \alpha \leq 1, \delta \leq 1. \end{aligned} \tag{11}$$

The parameters are calibrated as for minimum sacrifice. Note that the resulting *absolute* weights from an inverse optimal taxation simulation with different justness functions differ in magnitude because derivatives of the f_i functions differ. To make the comparison of weights between concepts of justness easier, we therefore calculate relative weights by dividing the obtained absolute weights e_i through the absolute weight of group 0 as in Blundell et al. (2009).

3 Empirical Calibration

3.1 The Data

We use data from the 2015 wave of the German Socio-Economic Panel (SOEP), a representative annual household panel survey. Wagner et al. (2007) provide a detailed description of the data.

As the model does not cover spousal labor supply, we restrict the analysis to working-age singles. We exclude individuals with children, heavily disabled and people who receive Unemployment Benefit I,[16] because their budget constraints and labor supply behavior differ substantially. Group 0 consists of the unemployed receiving Unemployment Benefit II.[17] We exclude the long-term unemployed with transfer non-take up, as they differ substantially from the standard case and face a different budget constraint. For the analysis we make use of a question in the SOEP, introduced in the 2015 wave, that asks individuals what monthly income they would consider just. This question is discussed in more detail in the following subsection.

Table 1: Summary Statistics

	Mean	Std. Dev.	N
Monetary variables			
Monthly Gross Income	2626.75	1925.41	1119
Monthly Net Income	1766.18	991.86	1119
Just Net Income*	2150.85	1040.89	572
Demographics			
Sex (1=men, 2=women)	1.41	0.49	1119
Weekly Hours of Work**	41.66	9.51	990
Age	43.97	10.47	1119
East Germany Dummy	0.27	0.45	1119
Party supported in percent			
CDU/CSU (conservatives)	13.2	0.339	1119
SPD (social democrats)	8.9	0.285	1119
Bündnis 90/Die Grünen (green)	8.7	0.282	1119
DIE LINKE (left)	3.4	0.182	1119
FDP (liberal)	0.3	0.054	1119

Source: Own calculations based on the SOEP
*Only individuals who perceive their gross income as just
**Excluding the unemployed

Table 1 shows summary statistics for our sample. Net incomes equal gross incomes and transfers minus income taxes and social security contributions. Only the currently employed are asked questions about what income they would consider as just.[18] Therefore, average just net income is substantially larger than average actual net income, which includes the unemployed.

[16]This transfer is targeted to the short-term unemployed and depends on the previous labor income.

[17]This transfer is targeted at the long-term unemployed and covers the social existence minimum.

[18]For the working poor, we add actual transfers to stated just net incomes, as these do not include transfers. Transfers include Unemployment Benefit II, housing benefits and alimonies.

3.2 Just and Actual Budget Constraints

In the 2015 wave, the SOEP introduced new questions that ask what amount of income respondents would consider just in their current occupation. In particular, individuals state how high their gross income and net income would have to be in order to be just. A screenshot of this part of the questionnaire is provided in Appendix C.

Compared to other approaches to obtain information about individuals' ideas of justness, the advantage of the question is that individuals do not need to have a worked out theory of just taxation in mind to answer the question. Moreover, interviewees do not need a thorough understanding of tax schedules.

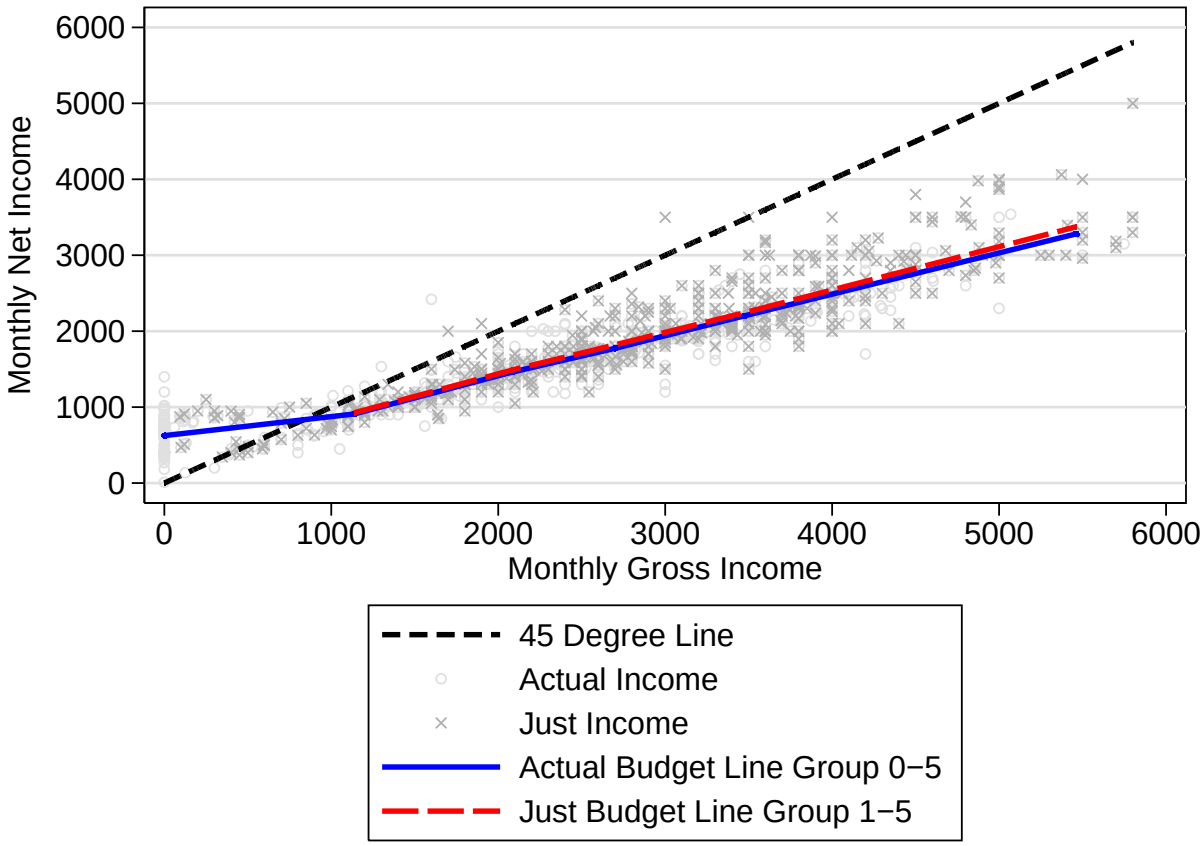

Figure 1: Just Net and Gross Incomes. Source: Own calculations based on SOEP

The 2015 German tax and transfer system is characterized by relatively generous transfers for the unemployed and high transfer withdrawal rates of up to 100 percent. Figure 1 shows the status quo of the German tax and transfer system and the just tax and transfer system based on our sample. The first segment of the actual budget line is almost horizontal at a net income of about

600 Euro. This represents transfer recipients. The slope of the budget line is steeper further to the right, representing individuals who do not receive transfers, but pay income taxes and social security contributions.

Gray circles represent the actual net incomes for given gross incomes. Some circles are crossed by x. This means either that an individual considers his or her actual income just or the actual income of another person. The 45 degree line marks the points where no taxes are paid. Points above this line represent actual transfer recipients or those who deem receiving transfers as just. However, most individuals perceive net incomes to be fair, where taxes have to be paid. It is likely that status quo bias explains this pattern. Nonetheless, the answers of the respondents reflect actual perceptions of just incomes. The solid blue and the dashed red lines summarize this information. The solid blue line depicts the average actual budget constraint for six income groups that we use in the main analysis. The dashed red line shows the just budget constraint for the same groups. The just budget line is slightly above the actual budget line. The groups are defined as the unemployed and quintiles of those with positive gross labor incomes. The budget lines are based on averages for the groups. The actual budget line is relatively flat for the working poor, implying high withdrawal rates. The *just* budget line is defined only for those with positive labor income and lies slightly above the actual budget line. This reflects the preferences for paying less taxes. The distribution of net incomes for a given value of gross income is skewed toward the no tax line. Deviations in this direction can be explained with allowances. The positive skew of just net incomes is due to more people perceiving substantially higher net incomes as just than less. The incidence of crossed circles, i.e., persons who perceive their current income as just is higher below and around the average budget lines.

3.3 Labor Supply Elasticities

Similar to Blundell et al. (2009) and Haan and Wrohlich (2010), we use a random utility discrete choice labor supply model where each individual can choose between five work hour choices and unemployment. Each hours-person combination is associated with a gross income and net income calculated using the microsimulation model STSM. See Jessen et al. (2017); Steiner et al. (2012) for further details on the STSM and the labor supply model.

To estimate mobility elasticities we first assign each hours-person combination in the data to

an income group $i = 1,..,I$.[19] Then we predict changes in relative employment shares of income groups due to changes in relative net incomes $c_i - c_{i-1}$ and $c_i - c_0$ and calculate the mobility elasticities given by equations (3) and (4). The elasticities are reported in the tables in the next section.

4 Results

4.1 Main Results

Table 2 shows average monthly individual gross incomes (column I) and corresponding average net incomes (column II) for six income groups. As is apparent from the increase in net incomes from group 0 to group 1, the marginal transfer withdrawal rate is substantial in the status quo. Column III shows average net incomes perceived as just. These average just net incomes are

Table 2: Resulting Relative Weights for Different Justness Concepts

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross	Net	Just Net	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
	Income	Income	Income					Abs	Rel	Abs	Rel
0	0	625	630*	0.11	-	-	1	1	1	1	1
1	1137	910	925	0.19	0.08**	0.08**	0.239	0.0020	1.426	0.0797	0.1675
2	2082	1461	1488	0.17	0.10	0.08	0.364	0.0007	0.8488	0.0674	0.3645
3	2697	1773	1819	0.19	0.09	0.07	0.357	0.0005	0.7300	0.0390	0.3083
4	3472	2200	2242	0.17	0.07	0.06	0.392	0.0003	0.8059	0.0467	0.5722
5	5458	3279	3373	0.18	0.05	0.08	0.368	0.0002	0.9048	0.0196	0.5298

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.16.

slightly above average actual net incomes for all groups. As only employed persons respond to the SOEP question about just net income, just net income is set marginally above the actual

[19]For instance, a person with an hourly wage of 20 Euro earns a gross income of approximately 860 Euro per month, if she works 10 hours per week and about 1720 Euro if she works 20 hours. If she works 10 hours, she is assigned to group I. If she works 20 hours, she is assigned to group II. In contrast, a person with an hourly wage of 50 Euro is assigned to income group II if she works 10 hours, earning about 2150 Euro per month.

average transfer income of group 0.[20] Column IV shows the population share of each income group and columns V and VI display the extensive and intensive mobility elasticities, which have been estimated as described in Subsection 3.3. For group 1, there is only one elasticity, see equations (3) and (4). The last five columns show relative explicit social weights for the different justness concepts.

The welfarist approach (column VII) is an application of Saez (2002) as in Blundell et al. (2009). Group 0 has the highest social weight, the working poor (group 1) have the lowest weight in line with previous studies described in Appendix A. At the optimum, the welfarist weights show the costs of redistributing one Euro from individuals in group 0 to individuals in other groups. For instance, an increase in income for individuals in group 1 would reduce income in group 0 by only 0.239 Euro because individuals would move from group 0 to group 1, reducing the transfer burden of the state. Equivalently, the social planner values increasing the income for group 1 by one Euro 0.239 times as much as increasing the income of group 0 by one Euro. The low weights for the working poor are related to the high marginal tax rate for individuals moving from group 0 to group 1.[21] Relative weights of the upper four income groups are close to each other, in line with previous findings for Germany by Bargain et al. (2014).

Table D.1 in Appendix D shows the optimal welfarist tax schedule with weights decreasing with income. The resulting optimal tax schedule implies a substantially lower marginal transfer withdrawal rate for the working poor than in the status quo and higher net incomes for groups 1, 2, and 3. This underlines our finding that decreasing welfarist weights would imply lower transfer withdrawal rates.

Column VIII of Table 2 displays optimal weights for the minimum absolute sacrifice approach. These weights show how much it costs in terms of sacrifice of group 0 to reduce the sacrifice for members of a particular group as defined in equation (8). We focus the interpretation on the working groups as the unemployed are net recipients of transfers and thus 'pay a positive sacrifice', see Section 2.2. The weight of this group depends strongly on the choice of parameters, especially α, but this does not change the ranking of the working groups. A comparison of the weights of

[20] We experimented with different values for this number. While changing the just net income of group 0 has a substantial impact on this group's subjective social justness weights relative to other groups, the weights of other groups relative to one another remain virtually the same.

[21] *Ceteris paribus*, higher elasticities and higher marginal tax rates imply a position further to the right of the Laffer curve and thus lower social weights.

tax-paying groups shows the highest weight for the working poor, 0.002,[22] and decreasing weights with income. The social planner is indifferent between imposing a slightly higher sacrifice on the working poor and imposing four times this additional sacrifice on the middle class (group 3). As the sacrifice increases quadratically with taxes paid, the marginal sacrifice for the working poor is relatively small. Consider the benchmark case with fixed incomes and the same marginal sacrifice for all groups. In this case, all weights would be the same. This is the notion of equal marginal sacrifice. In comparison, in our analysis the marginal sacrifice is lower for the working poor. Therefore, weights are higher for this group.[23] A similar reasoning applies to the other groups, which results in declining social weights. Consequently, the minimum absolute sacrifice principle is in line with the 2015 German tax and transfer system.

Column IX shows results for the minimum *relative* sacrifice principle. Again, the working poor have the highest weight of the groups with a positive tax burden. However, in contrast to the absolute sacrifice principle, weights are not decreasing with income but U-shaped. Top income earners have relatively high weights according to the *relative* sacrifice principle, because the tax paid is divided through a high consumption level. Thus a small increase in taxes would not increase the relative sacrifice of this group by much. In fact, the middle class (group 3) has the lowest weight according to this principle as one would have to redistribute less to members of this group to reduce their sacrifice. Thus, the 2015 German tax and transfer system does not imply decreasing social weights under the minimum relative sacrifice principle.

Columns X and XI show social weights according to the absolute and relative subjective justness principles respectively. The subjective justness principle implies penalties for the deviation of net incomes from perceived just net incomes. As discussed above, there is no information on perceived just net incomes of the unemployed, so we focus on the interpretation of the social weights of working groups. For the absolute justness principle, the working poor have the highest social weights of the working population because their average net income deviates from just net income by only 15 Euros. Social weights are decreasing except for group 4, as individuals in this group would consider a net income of only 42 Euros more than their current income just. When considering *relative* deviations from just net income, group 4 has the highest social weights of all working

[22] Again, note that the *absolute* value of this weight depends on the calibration of α, which determines the weight of group 0. Therefore, the focus is on the relative difference between working groups.

[23] As the welfarist weights indicate, the deadweight loss of increasing taxes for group 1 is very high. If it was lower, this group's minimum sacrifice weight would be even higher.

groups since the deviation from just income is smaller relative to the high consumption level of group 4.

Only the minimum absolute sacrifice principle is in line with decreasing social weights. For absolute subjective justness, weights are declining except for group 4. The working poor have the lowest weight of all working groups in the welfarist and the relative subjective justness approach,[24] while they have the highest weight of all working groups in the absolute subjective justness approach.

To sum up, we find that the minimum absolute sacrifice principle is in accordance with declining social weights in the status quo. Thus, the minimization of absolute sacrifice is a good description of the aims of the German society regarding the tax and transfer system.

4.2 Results for Subsamples

To explore whether the 2015 tax transfer schedule was designed according to a particular concept of justness with focus on a specific group in mind, we split the sample into different groups. These groups differ substantially regarding the income distribution and elasticities, which might lead to different social weights. Moreover, perceived justness of taxation in these groups might differ systematically.

First, the sample is split into females and males. We find that women have a more elastic labor supply than men and lower incomes. In light of the discussions regarding the gender wage gap, subjective justness could differ systematically between women and men as well. Then, we present our results for East Germans and West Germans, respectively. These two groups lived under different political systems for more than a generation. We show that West Germans have higher incomes, less unemployment, but lower extensive elasticities than East Germans. Additionally, the tax schedule might be more in line with preferences of supporters of particular political parties. To this end we exploit the rich collection of household characteristics in the SOEP, in particular, which political party, if any, individuals support.

4.2.1 Results for Men and Women

In Table 3 we report results for the subsample of women without children, which we compare, in the following, with the results for the main sample and, later, to men. As expected, gross and

[24]The explanation is that the costs of decreasing the relative sacrifice for the working poor are low because of the relatively small denominator of f_1 and the fact that redistribution to this group is cost-effective.

net incomes in all income groups are lower and labor supply elasticities are slightly higher. For the welfarist case, the working groups have smaller weights relative to the unemployed than in the main sample. As before, we find that the working poor have the lowest weight. The finding that social weights for the minimum absolute sacrifice concept are decreasing with income is robust for this subsample. The working poor have higher weights than in the main sample as they pay considerably less taxes. As before, in the relative sacrifice case, the working poor have the highest weights and top income earners have the second highest weights.

For the absolute subjective justness concept, weights are decreasing except for group 2. The working poor have a high weight because for women this group's actual income is very close to its just net income. For relative justness, the working poor have the highest weight of the working groups and the three highest income groups have similar weights. Again, group 2 is the odd one out with a very low weight.

Table 3: Resulting Relative Weights for Different Justness Concepts for Women without Children

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross	Net	Just Net	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
	Income	Income	Income					Abs	Rel	Abs	Rel
0	0	615	620*	0.05	-	-	1.	1	1	1	1
1	976	863	865	0.19	0.09**	0.09**	0.126	0.0043	3.8757	0.3059	0.6062
2	1903	1271	1352	0.20	0.12	0.10	0.143	0.0006	0.7603	0.0090	0.0362
3	2548	1715	1747	0.19	0.10	0.10	0.200	0.0006	1.2620	0.0311	0.2395
4	3342	2083	2122	0.23	0.07	0.10	0.174	0.0003	0.9403	0.0222	0.2522
5	4948	3122	3226	0.15	0.06	0.12	0.182	0.0002	1.5273	0.0088	0.2206

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.18.

Table 4 shows results for the subsample of men. Incomes are higher and elasticities are lower than for women. In the welfarist case, weights of working groups are higher than for women. This is caused by lower elasticities, which lead to men being further on the left of the Laffer curve. Nevertheless, the working poor again have the lowest weight. The finding that weights in the absolute sacrifice case decrease with income holds for men as well. The weight of the working poor is lower for men than for women because the male group 1 pay substantially more taxes than their female counterparts. Again, in the relative minimum sacrifice case, the working poor have the highest weight and the middle class has the lowest weight of working groups. For the absolute

subjective justness concept, weights are decreasing apart from group 2. For relative subjective justness, the working poor have the smallest weight.

Table 4: Resulting Relative Weights for Different Justness Concepts for Men without Children

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross Income	Net Income	Just Net Income	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
								Abs	Rel	Abs	Rel
0	0	627	632*	0.15	-	-	1	1	1	1	1
1	1265	971	997	0.17	0.05**	0.05**	0.438	0.0015	0.7015	0.0846	0.1992
2	2228	1547	1565	0.18	0.08	0.04	0.513	0.0006	0.4911	0.1426	0.8650
3	2875	1889	1944	0.16	0.07	0.04	0.522	0.0004	0.4461	0.0477	0.4240
4	3622	2316	2381	0.17	0.06	0.04	0.551	0.0003	0.4873	0.0426	0.5698
5	6124	3561	3652	0.16	0.05	0.06	0.509	0.0002	0.4768	0.0281	0.8907

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.1.

4.2.2 Results for East and West Germany

Gross, net, and net just incomes are higher across all groups in West Germany (see Table 6) compared to East Germany (see Table 5). In contrast to the main sample and the previously analyzed subsamples, in the sample of East Germans the working poor are net transfer recipients and the marginal withdrawal rate when moving from group 1 to group 2 is still substantial.

The welfarist weights show highest social weights for the unemployed and lowest for the working poor (group 1 in the West, groups 1 and 2 in the East). An increase in income for individuals in group 1 by one Euro would reduce income in group 0 by only 0.21 Euro in West Germany and by about 0.34 in East Germany. The relative weights of the four (three for East Germany) higher income groups are very similar and higher than the weights for the working poor.

As in our main findings, optimal weights under minimum absolute sacrifice are decreasing in both samples, though the weight of group 1 is closer to the weight of group 0 than group 2 for East Germany as group 1 are net transfer recipients and thus enjoy a 'positive tax sacrifice'. Regarding groups with a positive tax burden, the weights imply that the social planner is roughly indifferent between imposing a slightly higher sacrifice on the working poor (group 1 in West Germany, group 2 in East Germany) and imposing twice this additional sacrifice on group 2 in the case of West Germany and group 3 in the case of East Germany. This shows that the minimum

absolute sacrifice principle is in line with the 2015 German tax and transfer system for East and West Germans.

Results for the minimum *relative* sacrifice principle show that the working poor have the highest weight of the groups with a positive tax burden in East Germany, but not in West Germany, where weights for the top income group are highest. The difference arises because top income earners in West Germany earn considerably more than their East German counterparts. As explained in Section 4.1, this implies higher weights for this justness concept because the denominator of the sacrifice is higher. In both samples the middle class (group 3 in the West, group 4 in the East) has lowest weights. Thus, the German tax and transfer system does not result in decreasing social weights under the minimum relative sacrifice principle.

Table 5: Resulting Relative Weights for Different Justness Concepts for East Germany

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross	Net	Just Net	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
	Income	Income	Income					Abs	Rel	Abs	Rel
0	0	591	596*	0.18	-	-	1	1	1	1	1
1	774	837	851	0.17	0.10**	0.10**	0.339	0.9957	1.0308	0.1211	0.2408
2	1581	1192	1222	0.18	0.16	0.08	0.342	0.0011	1.0580	0.0573	0.2294
3	2200	1574	1594	0.17	0.13	0.08	0.424	0.0007	0.9845	0.1059	0.7481
4	2808	1875	1920	0.14	0.11	0.07	0.430	0.0005	0.8241	0.0482	0.4772
5	4039	2607	2625	0.16	0.09	0.08	0.428	0.0003	0.9393	0.1188	2.3145

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.2.

Table 6: Resulting Relative Weights for Different Justness Concepts for West Germany

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross	Net	Just Net	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
	Income	Income	Income					Abs	Rel	Abs	Rel
0	0	653	658*	0.08	-	-	1	1	1	1	1
1	1408	1004	1030	0.21	0.07**	0.07**	0.210	0.0010	0.7161	0.0405	0.094
2	2324	1585	1616	0.16	0.09	0.08	0.309	0.0005	0.7465	0.0499	0.2905
3	2907	1898	1946	0.19	0.08	0.08	0.300	0.0004	0.6963	0.0314	0.2608
4	3699	2322	2378	0.19	0.06	0.06	0.323	0.0003	0.7449	0.0289	0.3593
5	6010	3516	3632	0.17	0.05	0.08	0.298	0.0002	0.7991	0.0129	0.3652

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.14.

The last two columns report social weights under the absolute and relative subjective justness principles, respectively. When considering the absolute justness principle, the working poor in group 1 in the East have the highest social weights of the working population because their average net income deviates from just net income by only 14 Euros. While the weights jump between groups in the East German sample, for West Germans social weights implied by *absolute* subjective justness decrease starting from group 2. The *relative* deviations from just net income imply increasing weights in West Germany starting from group 3.

4.2.3 Results for Supporters of Political Parties

We show results for subjective justness for three sets of political party supporters. This is interesting because subjective just incomes might differ substantially between supporters of different parties. This allows us to analyze if the tax transfer schedule is in line with the preferences of a specific coalition. Unfortunately, the number of observations is too low to allow a party-specific analysis, as most respondents do not identify themselves as supporters of a particular party. We investigate three groups. First, supporters of the grand coalition of the conservative Christian Democratic Union of Germany (CDU) and Christian Social Union in Bavaria (CSU) and the Social-Democratic Party (SPD). This grand coalition was in power when the survey was conducted in 2015. At any point of time since World War II at least one of these parties has been in power in West Germany. Additionally, we look at two passionately debated possible future coalitions: (1) a left-wing coalition including the SPD, the Green party and the socialist Left party; and (2) a center-right coalition including the CDU/CSU, the Greens, and the classical liberal Free Democratic Party (FDP).

Table 7 shows results for supporters of the CDU/CSU and SPD coalition, in power in spring 2017. The expectation for this group is that party supporters are relatively content with the status quo. Compared to the main sample, incomes are higher in all groups. As expected, just incomes are close to actual incomes. Strikingly, the pattern for the absolute justness weights is the same as in the main sample. Weights are decreasing, except for group 4. The pattern for relative justness is very similar to the main sample as well: The highest income earning groups have the highest weights.

Table 8 shows results for supporters of center left parties. One would expect that high income supporters of these parties are content with paying relatively high taxes and that lower income earners would prefer more redistribution. The income distribution of this subsample is similar to that of supporters of the grand coalition. For both subjective justness concepts, the highest income

group has the highest weight because this group would consider paying only 15 Euros less taxes as just. In contrast, in the main sample, the difference between actual and just net income for group five is about 100 Euros. However, in the left-wing sample, group 4 would perceive paying about 90 Euros less taxes as just and consequently has relatively low social weights.

The working poor have low weights as well even though they would consider paying only 15 Euros less taxes as fair. This is because the dead weight loss of redistribution to the working poor is low while this figure is high for higher income groups as indicated by the low welfarist weight for the working poor (not reported for this subsample).

Table 7: Resulting Relative Weights for Subjective Justness Concepts for SPD/CDU/CSU supporters

	I	II	III	IV	V	VI	VII	VIII
Group	Gross	Net	Just Net	Share	η	ζ	Subjective Justness	
	Income	Income	Income				Abs	Rel
0	0	689	694*	0.09	-	-	1	1
1	1298	924	929	0.19	0.07**	0.07**	0.1201	0.2164
2	2317	1641	1660	0.19	0.10	0.08	0.0730	0.4121
3	2946	1910	1944	0.16	0.09	0.08	0.0373	0.2834
4	3641	2288	2314	0.21	0.07	0.06	0.0538	0.5911
5	6272	3553	3604	0.15	0.05	0.08	0.0255	0.6723

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.14.

Table 8: Resulting Relative Weights for Subjective Justness Concepts for SPD/Left/Green supporters

	I	II	III	IV	V	VI	VII	VIII
Group	Gross	Net	Just Net	Share	η	ζ	Subjective Justness	
	Income	Income	Income				Abs	Rel
0	0	790	795*	0.10	-	-	1	1
1	1256	954	969	0.18	0.07**	0.07**	0.0106	0.0153
2	2354	1618	1634	0.18	0.10	0.08	0.0755	0.3154
3	3075	1978	2003	0.18	0.08	0.09	0.0472	0.2939
4	3710	2331	2423	0.18	0.07	0.07	0.0142	0.1200
5	5598	3338	3353	0.18	0.05	0.08	0.0818	1.4635

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.14.

Table 9 reports results for supporters of CDU/CSU, the Green Party and the FDP. As expected, incomes in all groups are higher than in the left-wing sample. This difference is between 151

(group 4) and 1186 Euros (group 5). Compared to the left-wing sample, the expectation is that the working poor will not demand substantially more redistribution. Indeed, the absolute justness social weights for this group are the highest among the working groups. For relative justness, groups 3 to 5 have the highest weights as they are relatively content with their net income.

Table 9: Resulting Relative Weights for Subjective Justness Concepts for CDU/CSU/FDP/Green supporters

	I	II	III	IV	V	VI	VII	VIII
Group	Gross	Net	Just Net	Share	η	ζ	Subjective Justness	
	Income	Income	Income				Abs	Rel
0	0	696	701*	0.04	-	-	1	1
1	1423	925	929	0.20	0.07**	0.07**	0.0571	0.1011
2	2541	1697	1742	0.20	0.10	0.09	0.0147	0.0858
3	3284	2147	2162	0.19	0.08	0.09	0.0481	0.4578
4	3861	2352	2389	0.19	0.06	0.06	0.0186	0.2105
5	6784	3812	3843	0.18	0.04	0.09	0.0213	0.6375

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.14.

The analysis by party supporters shows that social weights for absolute justness are roughly decreasing for supporters of the grand coalition, thus corroborating our main findings. Consequently, the results for absolute subjective justness in the main sample seem to be driven mainly by supporters of the grand coalition and independents (see Appendix E). Their preferences for the tax transfer schedule seem to be roughly in line with the concept of minimum absolute sacrifice, for which we find decreasing social weights in the main analysis. If the concept of justness that explains current tax practice and the subjective justness for most people is the concept of minimum absolute sacrifice, the role of welfarist optimal taxation models is not as important as previously assumed.

Our results provide the grounds for future research on the formation of preferences for tax transfer schedules. First, a large scale survey that allows to disentangle single parties or even the wings of parties could be used to confirm our suggestive evidence. Second, it would be interesting to investigate whether the tax design forms subjective justness or vice versa. Finally, our analysis is a first step to implement justness as a principle of tax policy: based on subjective information, tax schedules may be designed to be not only efficient but also just.

4.3 Robustness

In Appendix F, we show the robustness of our results. First, we analyze the robustness of the obtained social weights for absolute justness to different values of γ and δ (Tables F.1 and F.2). The result that social weights decline with income is robust to a wide range of calibrations. This shows that the main result is not driven by the parameter choice. Second, we set the intensive and extensive elasticities of all groups to 0.1 and show the results for all concepts of justness (Table F.3). The results are very close to the main results. This shows that slight variations in the elasticities do not change the results substantially.

5 Conclusion

In this paper, we reconcile a puzzling contrast between current tax transfer practice in many countries and the common approach in the optimal taxation literature. While the literature commonly assumes that the social planner values an additional unit of income for poor households more than an additional unit of income for higher income households, commonly observed high transfer withdrawal rates are only optimal if social weights of the working poor are very small. Therefore, we compare alternative approaches to welfarism and calculate the implied social weights. We formulate the problem of a social planner for three distinct concepts of justness: the welfarist approach, where the social planner maximizes the weighted sum of utility; alternatively, the minimum sacrifice concept where the social planner minimizes the weighted sum of absolute or relative (tax-)sacrifice; and, thirdly, the approach of subjective justness where the social planner minimizes absolute or relative deviations from perceived just net income. For the concept of subjective justness, we use a SOEP question introduced in the 2015 wave to obtain information about what amount of taxes individuals consider as just. Of course, all approaches maintain budget neutrality and account for labor supply reactions.

Like the existing literature, we find that the 2015 German tax and transfer system implies very low social weights for the working poor according to the welfarist criterion. The social planner values increasing the income for the working poor by one Euro 0.65 times as much as increasing the income of top earners by one Euro. This implies that an additional Euro of consumption for the working poor is valued less than marginal consumption of top income earners.

In contrast, the current tax-transfer practice can be reconciled as optimal and in line with decreasing social weights under the minimum absolute sacrifice criterion, under which the social

planner minimizes the sacrifice of individuals. In this case, the social planner is indifferent between imposing a slightly higher sacrifice on the working poor and imposing four times this additional sacrifice on the middle class.

Moreover, we find that the status quo is roughly in line with decreasing weights and a social planner minimizing deviations from what taxpayers consider as just. The subgroup analysis by political parties shows that this result is in line with preferences of supporters of those political parties that shaped the tax policy under CDU/CSU and SPD in the years 2013 to 2017 in Germany. Our results suggest that the role of welfarist optimal taxation models is not as important as previously assumed.

References

BARGAIN, O., M. DOLLS, D. NEUMANN, A. PEICHL, AND S. SIEGLOCH (2014): "Comparing Inequality Aversion across Countries when Labor Supply Responses Differ," *International Tax and Public Finance*, 21(5), 845–873. Cited on pages 5, 14, and 27.

BLOMQUIST, S., AND L. MICHELETTO (2006): "Optimal Redistributive Taxation when Government's and Agents' Preferences Differ," *Journal of Public Economics*, 90(6-7), 1215–1233. Cited on page 2.

BLUNDELL, R., M. BREWER, P. HAAN, AND A. SHEPHARD (2009): "Optimal Income Taxation of Lone Mothers: An Empirical Comparison of the UK and Germany," *Economic Journal*, 119(535), F101–F121. Cited on pages 2, 5, 9, 12, 14, and 26.

BOURGUIGNON, F., AND A. SPADARO (2012): "Tax–Benefit Revealed Social Preferences," *Journal of Economic Inequality*, 10(1), 75–108. Cited on pages 26 and 27.

DIAMOND, P. (1980): "Income Taxation with Fixed Hours of Work," *Journal of Public Economics*, 13(1), 101 – 110. Cited on page 4.

GERRITSEN, A. (2016): "Optimal Taxation when People do not Maximize Well-Being," *Journal of Public Economics*, 144, 122 – 139. Cited on page 2.

HAAN, P., AND K. WROHLICH (2010): "Optimal Taxation: The Design of Child-Related Cash and In-Kind Benefits," *German Economic Review*, 11, 278–301. Cited on page 12.

IMMERVOLL, H., H. J. KLEVEN, C. T. KREINER, AND E. SAEZ (2007): "Welfare Reform in European Countries: A Microsimulation Analysis," *Economic Journal*, 117(516), 1–44. Cited on page 27.

JESSEN, R., D. ROSTAM-AFSCHAR, AND V. STEINER (2017): "Getting the Poor to Work: Three Welfare Increasing Reforms for a Busy Germany," *Public Finance Analysis*, 73(1), 1–41. Cited on page 12.

KAHNEMAN, D., AND A. TVERSKY (1979): "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47(2), 263–291. Cited on page 8.

KANBUR, R., J. PIRTTILÄ, AND M. TUOMALA (2006): "Non-Welfarist Optimal Taxation And Behavioural Public Economics," *Journal of Economic Surveys*, 20(5), 849–868. Cited on page 2.

LOCKWOOD, B. B. (2016): "Optimal Income Taxation with Present Bias," Working paper. Cited on page 2.

LOCKWOOD, B. B., AND M. WEINZIERL (2016): "Positive and Normative Judgments Implicit in U.S. Tax Policy, and the Costs of Unequal Growth and Recessions," *Journal of Monetary Economics*, 77, 30–47. Cited on page 27.

MILL, J. S. (1871): *Principle of Political Economy*. Longmans Green & Co., London. Cited on page 3.

MIRRLEES, J. A. (1971): "An Exploration in the Theory of Optimum Income Taxation," *Review of Economic Studies*, 38(2), 175–208. Cited on page 4.

MUSGRAVE, R. A., AND P. B. MUSGRAVE (1973): *Public Finance in Theory and Practice*. McGraw-Hill, New York. Cited on page 3.

OOGHE, E., AND A. PEICHL (2015): "Fair and Efficient Taxation under Partial Control," *Economic Journal*, 125(589), 2024–2051. Cited on page 3.

RICHTER, W. F. (1983): "From Ability to Pay to Concepts of Equal Sacrifice," *Journal of Public Economics*, 20, 211–229. Cited on page 3.

SAEZ, E. (2001): "Using Elasticities to Derive Optimal Income Tax Rates," *Review of Economic Studies*, 68, 205–229. Cited on page 2.

——— (2002): "Optimal Income Transfer Programs: Intensive Versus Extensive Labor Supply Responses," *The Quarterly Journal of Economics*, 117(3), 1039–1073. Cited on pages 1, 2, 3, 4, 5, 6, 7, 14, 26, and 30.

SAEZ, E., AND S. STANTCHEVA (2016): "Generalized Social Marginal Welfare Weights for Optimal Tax Theory," *American Economic Review*, 106(1), 24–45. Cited on pages 2 and 3.

STEINER, V., K. WROHLICH, P. HAAN, AND J. GEYER (2012): "Documentation of the Tax-Benefit Microsimulation Model STSM: Version 2012," Data Documentation 63, DIW Berlin, German Institute for Economic Research. Cited on page 12.

WAGNER, G. G., J. R. FRICK, AND J. SCHUPP (2007): "The German Socio-Economic Panel Study (SOEP): Scope, Evolution and Enhancements," *Journal of Applied Social Science Studies*, 127(1), 139–169. Cited on page 9.

WEINZIERL, M. (2014): "The Promise of Positive Optimal Taxation: Normative Diversity and a Role for Equal Sacrifice," *Journal of Public Economics*, 118(C), 128–142. Cited on pages 3 and 8.

YOUNG, P. (1988): "Distributive Justice in Taxation," *Journal of Economic Theory*, 44, 321–335. Cited on page 3.

ZOUTMAN, F. T., B. JACOBS, AND E. L. W. JONGEN (2016): "Redistributive Politics and the Tyranny of the Middle Class," Tinbergen Institute Discussion Papers 16-032/VI, Tinbergen Institute. Cited on page 27.

Appendix

A Review of the Positive Optimal Taxation Literature

In a number of papers, researchers use optimal income taxation frameworks that incorporate labor supply responses to obtain "tax-benefit revealed social preferences" (Bourguignon and Spadaro 2012), i.e., they calculate the social weights under which the current tax and transfer system is optimal. Blundell et al. (2009) apply the Saez (2002) framework to single mothers in Germany and the UK to calculate implied social weights. They find that working mothers with low incomes have low weights compared to the unemployed and most other income groups. For Germany, social

weights for working poor single mothers with children under school-age can even become negative, thus implying a non-paretian social welfare function. Bourguignon and Spadaro (2012) apply positive optimal taxation to the French redistribution system. They find negative social weights for the highest income earners and equally for the working poor if participation elasticities are high. In general, social weights for the working poor are much lower than those for the unemployed or the middle class. Bargain et al. (2014) calculate social weights for 17 European countries and the United States. For all analyzed countries, they find the highest social weights for the unemployed and substantially lower weights for the working poor, i.e., the group with the lowest net income apart from the unemployed. In Belgium, France, Germany, the Netherlands, Portugal, the UK, and Sweden the tax-transfer system implies the lowest social weights for this group. Zoutman et al. (2016) show that the 2006 tax-transfer system in the Netherlands, as well as reform proposals by political parties, imply the highest weights for the middle class. Lockwood and Weinzierl (2016) perform inverse optimal taxation for the US from 1979 to 2010. They find that, if the standard welfarist model is correct, either perceived elasticities of taxable income or value judgments have changed considerably over time. This is interpreted as evidence that conventional assumptions of the benchmark model of optimal taxation should be questioned. Immervoll et al. (2007) find that expanding redistribution for the working poor would be very cost effective and would virtually imply no deadweight burden.

B Optimal Tax Formulae in the General Model

Behavioral reactions imply that h_i changes in case of a change in T_i. Using the product rule, the first order condition with respect to T_i is obtained as

$$-\mu_i h_i \frac{\partial f_i}{\partial c_i} - \sum_{j=0}^{I} \mu_j f_j \frac{\partial h_j}{\partial c_i} = -\lambda \left(h_i - \sum_{j=0}^{I} T_j \frac{\partial h_j}{\partial c_i} \right), \tag{12}$$

where λ is the multiplier of the budget constraint. The first order condition with respect to λ is the budget constraint. Reorganizing 12 and defining the explicit social weights as $e_i = \mu_i/\lambda$ yields

$$\left(1 - e_i \frac{\partial f_i}{\partial c_i}\right) h_i - \sum_{j=0}^{I} e_j f_j \frac{\partial h_j}{\partial c_i} = \sum_{j=0}^{I} T_j \frac{\partial h_j}{\partial c_i}. \tag{13}$$

Rearranging we obtain

$$h_i = h_i e_i \frac{\partial f_i}{\partial c_i} + \sum_{j=0}^{I} e_j f_j \frac{\partial h_j}{\partial c_i} + \sum_{j=0}^{I} T_j \frac{\partial h_j}{\partial c_i}. \tag{14}$$

With no income effects, $\sum_{i=0}^{I} \partial h_j / \partial c_i = 0$, i.e. increasing the income of all groups by the same amount has no effect on the choice of groups. Therefore, summing equation (14) over all $i = 0, \ldots, I$, one obtains that the redefined social welfare weights are normalized as well

$$\sum_{i=0}^{I} h_i e_i \frac{\partial f_i}{\partial c_i} = 1. \tag{15}$$

The assumption of no income effects implies that only h_{i-1}, h_i, h_{i+1}, and h_0 change when T_i changes, such that equation (13) simplifies to

$$\begin{aligned} \left(1 - e_i \frac{\partial f_i}{\partial c_i}\right) h_i &= T_0 \frac{\partial h_0}{\partial c_i} + T_{i-1} \frac{\partial h_{i-1}}{\partial c_i} + T_i \frac{\partial h_i}{\partial c_i} + T_{i+1} \frac{\partial h_{i+1}}{\partial c_i} \\ &\quad + e_0 f_0 \frac{\partial h_0}{\partial c_i} + e_{i-1} f_{i-1} \frac{\partial h_{i-1}}{\partial c_i} + e_i f_i \frac{\partial h_i}{\partial c_i} + e_{i+1} f_{i+1} \frac{\partial h_{i+1}}{\partial c_i}. \end{aligned} \tag{16}$$

Using the assumption that h_i depends only on the difference between the consumption of group i, consumption of the neighboring groups $i-1, i+1$, and group 0 and the fact that $\frac{\partial h_{i+1}}{\partial (c_{i+1} - c_i)} = -\frac{\partial h_i}{\partial (c_{i+1} - c_i)}$, $\frac{\partial h_i}{\partial (c_i - c_0)} = -\frac{\partial h_0}{\partial (c_i - c_0)}$, we can write after rearranging

$$\begin{aligned} \left(1 - e_i \frac{\partial f_i}{\partial c_i}\right) h_i &= (T_i - T_0) \frac{\partial h_i}{\partial (c_i - c_0)} - (T_{i+1} - T_i) \frac{\partial h_{i+1}}{\partial (c_{i+1} - c_i)} + (T_i - T_{i-1}) \frac{\partial h_i}{\partial (c_i - c_{i-1})} \\ &\quad - e_0 f_0 \frac{\partial h_i}{\partial (c_i - c_0)} - e_{i-1} f_{i-1} \frac{\partial h_i}{\partial (c_i - c_{i-1})} - e_{i+1} f_{i+1} \frac{\partial h_{i+1}}{\partial (c_{i+1} - c_i)} \\ &\quad + e_i f_i \left(\frac{\partial h_i}{\partial (c_i - c_0)} + \frac{\partial h_{i+1}}{\partial (c_{i+1} - c_i)} + \frac{\partial h_i}{\partial (c_i - c_{i-1})} \right). \end{aligned} \tag{17}$$

Using the definition of the elasticities (3) and (4) and that $\zeta_i \frac{h_i}{c_i - c_{i-1}} = \frac{\partial h_i}{\partial c_i - c_{i-1}}$, we obtain for each group after reorganizing

$$\begin{aligned} \frac{T_i - T_{i-1}}{c_i - c_{i-1}} &= \frac{1}{\zeta_i h_i} \Bigg\{ \left(1 - e_i \frac{\partial f_i}{\partial c_i}\right) h_i - \eta_i h_i \frac{T_i - T_0}{c_i - c_0} + \zeta_{i+1} h_{i+1} \frac{T_{i+1} - T_i}{c_{i+1} - c_i} \\ &\quad + e_0 f_0 \eta_i \frac{h_i}{c_i - c_0} + e_{i-1} f_{i-1} \zeta_i \frac{h_i}{c_i - c_{i-1}} + e_{i+1} f_{i+1} \zeta_{i+1} \frac{h_{i+1}}{c_{i+1} - c_i} \\ &\quad - e_i f_i \left(\eta_i \frac{h_i}{c_i - c_0} + \zeta_{i+1} \frac{h_{i+1}}{c_{i+1} - c_i} + \zeta_i \frac{h_i}{c_i - c_{i-1}} \right) \Bigg\}. \end{aligned} \tag{18}$$

Note that, by setting $e_0 = e_i = 0$, we obtain the Laffer-condition

$$\frac{T_i - T_{i-1}}{c_i - c_{i-1}} = \frac{1}{\zeta_i} + \frac{\zeta_{i+1} h_{i+1}}{\zeta_i h_i} \frac{T_{i+1} - T_i}{c_{i+1} - c_i} - \frac{\eta_i}{\zeta_i} \frac{T_i - T_0}{c_i - c_0}. \tag{19}$$

Substituting the equivalent of (18) for the next group in (18) and simplifying gives

$$\begin{aligned}\frac{T_i - T_{i-1}}{c_i - c_{i-1}} &= \frac{1}{\zeta_i h_i}\left\{\left(1 - e_i \frac{\partial f_i}{\partial c_i}\right) h_i + \left(1 - e_{i+1}\frac{\partial f_{i+1}}{\partial c_{i+1}}\right) h_{i+1}\right. \\ &\quad -\eta_i h_i \frac{T_i - T_0}{c_i - c_0} - \eta_{i+1} h_{i+1} \frac{T_{i+1} - T_0}{c_{i+1} - c_0} + \zeta_{i+2} h_{i+2} \frac{T_{i+2} - T_{i+1}}{c_{i+2} - c_{i+1}} \\ &\quad -(e_i f_i - e_{i-1} f_{i-1})\zeta_i \frac{h_i}{c_i - c_{i-1}} - (e_i f_i - e_0 f_0)\eta_i \frac{h_i}{c_i - c_0} \\ &\quad \left. -(e_{i+1} f_{i+1} - e_{i+2} f_{i+2})\zeta_{i+2} \frac{h_{i+2}}{c_{i+2} - c_{i+1}} - (e_{i+1} f_{i+1} - e_0 f_0)\eta_{i+1} \frac{h_{i+1}}{c_{i+1} - c_0}\right\}.\end{aligned} \tag{20}$$

Recursive insertion and simplifying gives the I formulae (5) that must hold if function (1) is optimized.

C Questionnaire

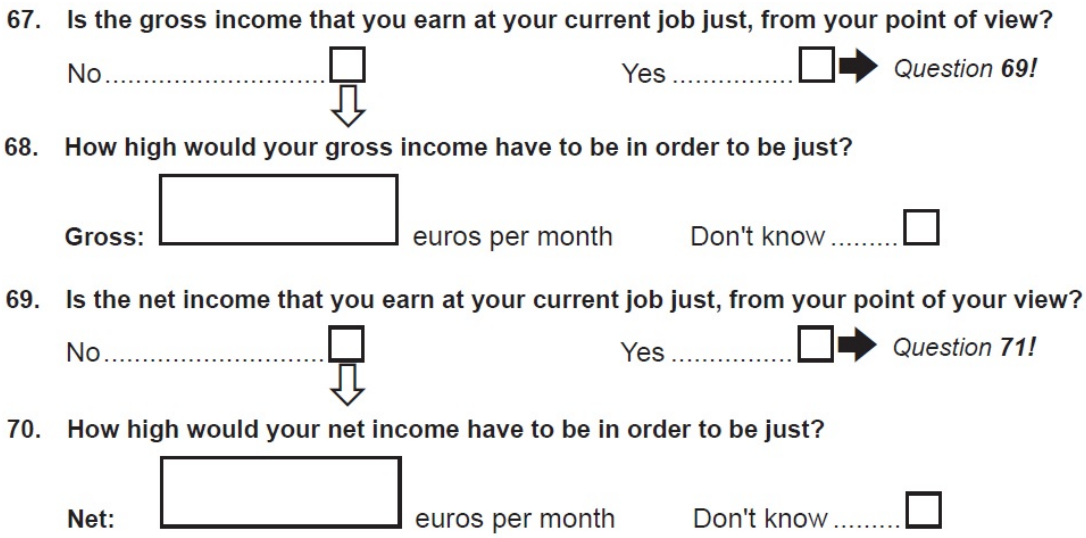

Figure C.1: The Question for Justness. Source: Official SOEP Questionnaire

D Optimal Welfarist Tax Schedule

Table D.1 shows the optimal welfarist tax schedule, where, following Saez (2002), implicit welfare weights are set according to the formula

$$g_i = \frac{1}{\lambda c_i^{0.25}} \tag{21}$$

and the shares of income groups are determined endogenously by

$$h_i = h_i^0 \left(\frac{c_i - c_0}{c_i^0 - c_0^0} \right)^{\eta_i}, \tag{22}$$

where the superscript 0 denotes values in the status quo. The simulation was done achieving budget neutrality and setting net income of group 0 to the status quo, as a deviation from this is not politically feasible.

Table D.1: Optimal Welfarist Tax Schedule

Group	Gross Income	Net Income	Optimal Net Income	Relative Weight
0	0	625	625	1
1	1137	910	1269	0.838
2	2082	1461	1640	0.786
3	2697	1773	1848	0.763
4	3472	2200	2060	0.742
5	5458	3279	2842	0.685

Note: German single households; own calculations based on the SOEP and the STSM.

E Resulting Social Weights for Independents

Table E.1 shows results for individuals who do not support any political party.

Table E.1: Resulting Relative Weights for Subjective Justness Concepts for Independents

	I	II	III	IV	V	VI	VII	VIII
Group	Gross	Net	Just Net	Share	η	ζ	Subjective Justness	
	Income	Income	Income				Abs	Rel
0	0	589	594*	0.12	-	-	1	1
1	1050	897	904	0.18	0.08**	0.08**	0.2109	0.4895
2	1948	1379	1429	0.17	0.11	0.07	0.0379	0.2020
3	2551	1694	1730	0.19	0.09	0.07	0.0536	0.4380
4	3325	2111	2176	0.18	0.07	0.07	0.0312	0.3926
5	5270	3199	3329	0.15	0.05	0.09	0.0150	0.4287

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.16.

F Sensitivity checks

Table F.1: Resulting Relative Weights for absolute subjective justness for different values of γ

	I	II	III	IV	V
Group	$\gamma = 1.1$	$\gamma = 1.5$	$\gamma = 2$	$\gamma = 3$	$\gamma = 5$
0	1	1	1	1	1
1	0.5293	0.0415	0.0020	5.6×10^{-6}	6.3×10^{-11}
2	0.4836	0.0249	0.0007	7.2×10^{-7}	1.1×10^{-12}
3	0.4600	0.0198	0.0005	3.1×10^{-7}	2.1×10^{-13}
4	0.4519	0.0175	0.0003	1.7×10^{-7}	6.2×10^{-14}
5	0.4230	0.0129	0.0002	5.5×10^{-8}	6.7×10^{-15}

Note: German single households; own calculations based on the SOEP and the STSM.

Table F.2: Resulting Relative Weights for absolute subjective justness for different values of δ

	I	II	III	IV	V
Group	$\delta = 0.1$	$\delta = 0.3$	$\delta = 0.5$	$\delta = 0.7$	$\delta = 1$
0	1	1	1	1	1
1	4.4×10^{-6}	1.7×10^{-5}	6.7×10^{-5}	0.0004	0.0020
2	1.2×10^{-6}	5.2×10^{-6}	2.2×10^{-5}	8.8×10^{-5}	0.0007
3	7.8×10^{-7}	3.3×10^{-6}	1.4×10^{-5}	5.7×10^{-5}	0.0005
4	5.8×10^{-7}	2.5×10^{-6}	1.0×10^{-5}	4.3×10^{-5}	0.0003
5	3.2×10^{-7}	1.6×10^{-6}	5.7×10^{-6}	2.4×10^{-5}	0.0002

Note: German single households; own calculations based on the SOEP and the STSM.

Table F.3: Resulting Relative Weights for Different Justness Concepts with elasticities set to 0.1

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI
Group	Gross	Net	Just Net	Share	η	ζ	Welfarist	Minimum Sacrifice		Subjective Justness	
	Income	Income	Income					Abs	Rel	Abs	Rel
0	0	625	630*	0.11	-	-	1.	1.	1.	1.	1.
1	1137	910	925	0.19	0.1**	0.1**	0.169	0.0020	1.5882	0.0558	0.1173
2	2082	1461	1488	0.17	0.1	0.1	0.321	0.0007	0.9157	0.0595	0.3217
3	2697	1773	1819	0.19	0.1	0.1	0.304	0.0004	0.7778	0.0332	0.2627
4	3472	2200	2242	0.17	0.1	0.1	0.321	0.0003	0.8560	0.0382	0.4678
5	5458	3279	3373	0.18	0.1	0.1	0.293	0.0002	0.9411	0.0157	0.4223

Note: German single households; own calculations based on the SOEP and the STSM.
*Just net income for this group is set as explained in the text.
**Overall elasticity of group one is 0.2.

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