Redistribution in Whose Favor? Preferences with Regard to Types of Beneficiaries and Their Nationalities

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29 December 2023

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December 29, 2023

Abstract

The objective of this paper is to measure preferences for income redistribution through the public budget when recipients differ in terms of their ' degree of merit' (such as the working poor) and their nationalities. A discrete choice experiment (DCE) was performed involving a representative sample of 979 Swiss citizens, permitting to test a number of competing hypotheses about the demand for redistribution. The income tax to be paid as a share of income serves as the price attribute to derive marginal willingness-to-pay (MWTP) values. They are found to differ significantly between recipients' nationalities even before the acceleration of immigration after 2009 (Swiss, citizens of Western European countries, citizens of other countries) and their types (old-age pensioners, people in ill health, the unemployed, working poor, and families with children). Swiss citizens exhibit positive MWTP in favor of themselves or Western European citizens to the detriment of citizens of other countries, who are perceived to be culturally distant.

Keywords: Preferences for redistribution, willingness to pay, discrete choice experiments, social status, immigration debate, pocketbook voting, insurance motive.

JEL classification: C35, C93, D63, H29

*The authors gratefully acknowledge financial support from the Swiss National Science Foundation (SNF) under Project no. 100012-116398. They received helpful comments from Ilpo Kauppinen and the participants in the European Public Choice Society Annual Meeting 2017 (Budapest, Hungary, 19-22 April 2017).

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1 Introduction

During the last two decades, there has been a great deal of research into the demand for redistribution and its determinants. However, this research focuses on preferences for the total amount of redistribution and its economic, institutional, and behavioral determinants while neglecting preferences for the composition of the redistributive budget. Some recent examples are Alesina and La Ferrara (2005), Alesina and Giuliano (2010), Neustadt and Zweifel (2017), and Neustadt (2011). One notable exception is a study by Boeri et al. (2002) based on Contingent Valuation (CV) experiments. However, a weakness of the CV approach is that it holds all the attributes of the good in question constant, varying its price only. This is not descriptive of actual decision making, where other attributes almost always vary along with price; moreover, it invites strategic responses because respondents can focus on a single attribute. In this paper, other attributes of importance will be shown to be the uses of the money available for redistribution (old-age pensioners, people in ill health, the unemployed, working poor, families with children) and the nationality of beneficiary (Swiss, citizens of Western European countries, citizens of other countries).

In contrast to CV, the methodology of Discrete Choice Experiments (DCE) used in this study allows the creation of realistic decision-making scenarios by making respondents choose between alternatives where all attributes vary, among them, price (defined here as the tax paid as a share of income). One main finding is that insurance motive determining the marginal willingness to pay (MWTP) for redistribution is more convincing than the 'pocketbook' voting view. Another finding is the evidence of (imperfect) altruism, exemplified by positive WTP of aged people in favor of families with children to the detriment of all other beneficiaries and positive WTP of Swiss nationals in favor of Western European migrants to the detriment of foreigners of more distant origin.

The remainder of this paper is structured as follows. Section 2 contains a literature review from which hypotheses to be tested are derived. The first set of hypotheses concerns the different beneficiaries of redistribution and the second set, their nationalities. Section 3 presents the design of the DCE. Descriptive statistics of the experiment follow in Section

4, and hypothesis tests, in Section 5. Section 6 summarizes the results and concludes with implications for public policy.

2 Literature Review and Statement of Hypotheses

This section first presents research that defines the general background of this paper and then moves on to contributions that lead to a set of specific hypotheses to be tested.

2.1 The Three Categories of Determinants of the Demand for Income Redistribution

In the review by Alesina and Giuliano (2010) and the comparative study by Zweifel and Neustadt (2013), the authors identified a wide set of factors influencing preferences for public income redistribution that can be categorized as economic, behavioral, and political.

2.1.1 Economic Determinants

As to the economic determinants, Alesina and La Ferrara (2005) empirically analyzed the effects of current and future income on the demand for redistribution in the United States. While low current income bolsters demand, chances for a higher future income reduce it provided the tax system is progressive.

Neustadt and Zweifel (2015, 2017) and Neustadt (2011) elicit preferences concerning the total volume of income redistribution derived from a DCE. According to a specification relating choices to the attributes of redistribution without socioeconomic covariates, the average Swiss citizen would have to be paid a compensation of CHF 11.78 (some US$ 12) per month (0.72 percent of monthly income) for an additional percentage point of GDP devoted to public redistribution. In addition, a very marked status quo bias would have to be overcome by payment of another 5.27 percent of monthly income. WTP for redistribution is estimated to be maximum at 21 rather than the current 25 percent of GDP. Furthermore, Neustadt and Zweifel (2017) test several hypotheses concerning the effects

of economic well-being on the demand for redistribution without any confounding supply-side influences. WTP for redistribution is shown to increase with income and education, contradicting the standard economic model [Romer (1975), Roberts (1977), Meltzer and Richard (1981)]. The Prospect of Upward Mobility hypothesis [Hirschman and Rothschild (1973), Benabou and Ok (2001)] receives very partial empirical support.

As suggested by the social contract literature, citizens' preferences for redistribution can also be interpreted as preferences for insurance by risk-averse individuals [cf. Rawls (1999)]. In a hypothetical situation, where individuals do not yet know their endowment nor their future position in society ('veil of ignorance'), demand for redistribution is predicted because it provides an income transfer from more favorable future states to less favorable ones. Beck (1994) investigated individual behavior under the 'veil of ignorance' in an experiment. Using lotteries to represent a hypothetical society with random differences in individual incomes, he analyzes the amount of desired income redistribution. Individuals indeed are found to display risk aversion, albeit not of the extreme kind as implied by the Rawlsian maximin rule. Furthermore, their preference for income redistribution does not exceed the level that can be explained by individual risk aversion.

The insurance view of income redistribution was corroborated by Gärtner et al. (2017), who measure both risk aversion and demand for redistribution in society through a questionnaire sent to a representative sample of the Swedish population. The degree of risk aversion is shown to be positively related to female sex, age, and working-class background. The preference for redistribution decreases with income and increases with altruism (measured by stated willingness to donate a win to charity). Even when controlling for gender, age, married status, number of children, education, and unemployment, the authors find a correlation between risk aversion and the demand for redistribution. Assandri et al. (2018) distinguish between a treatment and a control group in their laboratory experiment, which allows them to conclude that higher risk aversion is associated with stronger support of redistribution across members of a society that allows upward social mobility.

In another laboratory experiment, Bjerk (2016) surprisingly found that lower income uncertainty was associated with a stronger rather than weaker demand for redistribution

among a subset of participants. The size of this group increased when communication prior to the start of the experiment was possible, pointing to a possible effect of reciprocity.

The insurance view of income redistribution provides the foundation for Hypotheses 2 and 3 stated in Section 2.2.

2.1.2 Behavioral Determinants

Among the behavioral determinants of income redistribution, beliefs have been at the center of attention. Alesina and Angeletos (2005) developed a model where society's beliefs whether effort or luck determines economic success are prevalent in society. In the first case, the self-fulfilling equilibrium is characterized by a low amount of redistribution; in the second case, by a high amount. Benabou and Tirole (2006) extended the analysis by developing a model designed to explain the emergence and persistence of such collective beliefs.

On the empirical side, Fong (2001) presented evidence in line with Alesina and La Ferrara (2005) suggesting that beliefs about the role of luck in determining economic success are an important explanatory variable in the demand for redistribution, which however could be conditioned by a concern for incentives. If effort determines income, then an increased income tax rate for financing redistribution causes a loss of output due to weakened work incentives. Yet, Fong (2001) found that this concern does not modify the link between beliefs and the demand for redistribution. Using fiscal data, Corneo and Fong (2008) estimated WTP for distributive justice in the United States to amount to about one-fifth of disposable household income. However, there are indications of marked preference heterogeneity between racial and income groups. The current paper differs from Corneo and Fong (2008) by putting emphasis on the elicitation of preferences with regard to the composition of the total budget; in addition, it analyzes preference heterogeneity with regard to benefit recipients in much greater detail.

Boeri et al. (2001) studied attitudes towards redistribution with a focus on pension and unemployment schemes in France, Germany, Italy, and Spain, using CV experiments that

imposed an explicit trade-off between income and social insurance coverage on respondents. They found opposition against an extension of the welfare state, with conflicts between young and old, rich and poor, and insiders and outsiders creating significant hurdles to welfare reform. Neustadt (2011) focused on preference heterogeneity with respect to cultural and religious beliefs, confirming the negative relationship between the degree of religiosity and WTP for redistribution identified e.g. by Gruber and Hungerman (2007). Durante et al. (2014) conducted a laboratory experiment under a variety of conditions and show evidence of all three factors of support for income redistribution (income maximization, risk aversion, and social preferences).

Another behavioral explanation of redistribution is imperfect altruism [Fong et al. (2006)]. While perfect altruism is exclusively governed by recipients' preferences, imperfect altruism also reflects donor preferences. It is enhanced by government involvement, which ensures that there is no free riding of non-contributors on donors' altruism. Potential donors are predicted to oppose public welfare if they believe that recipients take advantage of the system, a behavior that often is attributed to members of ethnic minorities and immigrants.

Boeri (2010) compared actual access to welfare and net fiscal position of immigrants with perceptions measured by the EU Survey of Income and Living Conditions. While there is no evidence that legal (notably skilled) immigrants are net recipients of transfers, the perceptions are that they are over-represented among beneficiaries of non-contributory transfers. In addition, immigrants seem to receive more transfers than natives when account is taken of their educational attainments and family characteristics, notably in the European Union countries with the most generous welfare schemes. Overall, negative perceptions about migrants in Europe are shown to be driven by the concerns that foreigners abuse welfare.

Alesina et al. (2023), using experimental and survey data from the U.S., Germany, the UK, France, Italy and Sweden, show that natives tend to overestimate the number of immigrants overall and the share of immigrants from the Middle East, North Africa, and Muslim immigrants in particular. Conversely, they substantially underestimate the share

of Christian immigrants. Natives also tend to underestimate immigrants' income and education levels but to overestimate their dependence on the host country's welfare state and their unemployment rate. All these misperceptions are shown to contribute to natives' aversion to income redistribution, as immigrants are seen as culturally and religiously more distant and as benefiting disproportionately from the generosity of the welfare state.

Based on a survey covering 140 regions of 16 Western European countries, Alesina et al. (2021) examine the relationship between the prevalence of immigrants and the demand for income redistribution. They find that native respondents exhibit lower support for redistribution when the share of immigrants in their regions of residence is higher. This negative association is driven by regions of countries characterized by generous welfare provision and by respondents at the center or the right of the political spectrum. It is especially marked when immigrants are from Middle-Eastern countries, are less skilled than natives, and are subject to more residential segregation.

2.1.3 Political Determinants

The literature reported in this section differs from that of the two preceding ones in that it studies the outcome of the interaction between voters' demand for and politicians' supply of income redistribution. According to public choice theory, politicians in a democracy seek to increase their chance of (re-)election by proposing programs benefiting their constituencies through income redistribution. Given proportional representation, the aggregation across constituencies needs to extend across multiple groups, leading Persson and Tabellini (2000, 2003), Lizzeri and Persico (2001) and Milesi-Ferretti et al. (2002) to predict a tendency towards universal programs (favoring pensioners, the working poor, and minorities). By way of contrast, these authors predict that majority rule results in 'pork barrel' programs targeted at those groups who are likely to determine the outcome of the vote.

Persson and Tabellini (2003) indeed found that countries with proportional representation have a share of government expenditure in GDP that *ceteris paribus* is five percentage points higher than those with majority rule. Additional political determinants of redistribu-

tion include two-party vs. multiparty system, presidential vs. parliamentary democracy, and direct vs. representative democracies. Two-party systems, presidential, and direct democracies are all predicted to induce less public redistribution.

The political determinants of income redistribution are not analyzed in this paper because they reflect the interests of politicians at least as much as those of citizens, which constitute the focus of the DCE to be described in Sections 3 and 4 below.

2.2 Statement of Hypotheses with Regard to Types of Domestic Recipients

In this paper, preferences are elicited not only for the amount of income redistribution ('the size of the pie') but also for its composition ('the slices of the pie'). The standard model by Meltzer and Richard (1981) amounts to a 'pocketbook voting' hypothesis, which has deep roots in the Continental tradition of public finance. It reflects the idea of benefit taxation (or equivalent taxation) originally introduced by Wicksell (1896) and later developed by Lindahl (1919). It predicts that tax-paying voters who are potential recipients of a benefit support this type of benefit. Elinder et al. (2015) presented empirical support for prospective pocketbook voting in Sweden. They showed that parents with young children react to proposed policies affecting them much stringer than parents with somewhat older children. This relationship is likely causal because the two groups of parents previously had voted almost identically in a previous ballot. Note that rather than focusing on voter responses to past policies, the authors related voters' assessments of current policy proposals to their choices in later ballots. Their findings therefore not only constitute additional evidence of citizen support of policies they stand to benefit from; they also support the notion that redistributive preferences experimentally measured can be expected to have political consequences in a democracy.

In sum, the pocketbook voting literature motivates the following set of hypotheses when five groups of beneficiaries are distinguished: working poor, the unemployed, old-age pensioners, families with children, and people in ill health.

HYPOTHESIS 1A: *Demand for redistribution in favor of the working poor is expected to be higher among citizens who belong to or expect to become working poor, compared to others.*

HYPOTHESIS 1B: *Demand for redistribution in favor of the unemployed is expected to be higher among citizens who expect to become or to stay unemployed, compared to others.*

HYPOTHESIS 1C: *Demand for redistribution in favor of the old-age pensioners is expected to be highest among citizens near and beyond the retirement age.*

HYPOTHESIS 1D: *Demand for redistribution in favor of families with children is expected to be higher among citizens with children, compared to others.*

HYPOTHESIS 1E: *Demand for redistribution in favor of people in ill health is expected to be higher among citizens who experience health problems themselves or have relatives with health problems, compared to others.*

In view of the insurance motivation for redistribution proposed by Beck (1994), the ordering of the risks confronting an individual is of crucial importance. Information on the working poor in Switzerland (an uninsured risk) is not available; however, for persons with no education beyond minimum schooling, the share of households with incomes below the poverty level (defined as 60 percent of the median adjusted for household size) is 29 percent [BFS (2010)]. Unemployment has always been below four percent since 2010 and not much higher before [SECO (2010)], and it is largely insured as well.

The 'risk' of living up to retirement age (65 for men, 63 for women) is 85 percent for a 20 year old male and 97 percent for a 20 year old female, respectively [BFS (2005)]. However, this risk is highly insured because mandatory public provision (the first of three pillars, organized as pay-as-you-go) and mandatory employment-related provision (funded second pillar) together guarantee about 60 percent of pre-retirement income. Additionally, means-tested supplemental benefits can be claimed by retired individuals if their combined pension income from the first two pillars is not sufficient to cover the basic needs in the age of retirement.[1] As shown by Bütler (2009), this results in an overall replacement rate

[1]For a detailed overview of the Swiss old-age pension insurance system, see BSV (2019), and for social insurance statistics, see BSV (2018).

of over 60 percent. The first two pillars of the old-age insurance system, together with the means-tested benefits, can be seen as a form of income redistribution within and between generations. The third pillar of the Swiss old-age pension insurance system provides an opportunity of consumption smoothing over time through tax-favored saving. Having very limited redistributive features, it is therefore beyond the scope of the current investigation.

The highest uninsured 'risk' is to be in a household with children; it amounts to 33 percent as of 2000 [BFS (2008)]. While from an economic point of view, the number of children reflects a conscious choice in contemporary society, surveys show that large families are associated with higher exogenous poverty risk [see e.g. Sherman et al. (2013)].

As to the risk of ill health, a survey found that 28 percent of the respondents in the Swiss canton of Fribourg felt chronically ill [OBSAN (2010)]. However, at least the financial consequences of chronic illness are largely covered by mandatory health insurance.

In sum, one can state the following insurance-related hypothesis.

HYPOTHESIS 2: *Demand for redistribution is expected to be highest when it benefits families with children, followed by the working poor. It is expected to be markedly lower when it benefits pensioners, people in ill health, and the unemployed due to generous insurance coverage.*

2.3 Statement of Hypothesis with Regard to Recipients' Nationalities

In the case of Switzerland, it is important to note that beginning in 2000, the share of foreign-born in the resident population increased rapidly, from 22 percent to 24.4 percent in 2005 and 26.5 percent in 2010 [see Macrotrends (2023b)].[2] The DCE was performed in 2008 so fell in the period of rapid increase. In the same year, the revised Foreign Nationals Act went into effect, imposing stricter entry requirements on non-EU/EFTA immigrants

[2]The only European country with a still higher share of foreign-born is Luxembourg, with 32 percent in 2000. However, this share was remaining stable before 2010, with estimated 32.9 percent in 2005 and 32.1 percent in 2010 [see Macrotrends (2023a)].

and harsher punishments if caught committing a crime. In contrast, nearly 60 percent of Swiss voters rejected a popular referendum designed to tighten the free-movement-of-labor agreements the country has with 25 EU member states, newly including Bulgaria and Romania, which joined the EU in 2007, see Schindall (2009).

However, there is evidence that immigrants from Western Europe are less likely to draw unemployment benefits during a prolonged period than those from the former Yugoslav republics (FYR) and from outside the EU. While the Federal Statistical Office only distinguishes between Swiss and foreigners in its unemployment data, Auer et al. (2017) were able to evaluate more finely structured statistics compiled by the canton of Vaud in 2012 regarding the duration of the payment of unemployment benefits. While the mean duration among the Swiss was 199 days, it was 209 days among immigrants from the EU (excepting Portugal with a lower value and the FYR) but 233 days for immigrants from both the FYR and non-EU countries. Although the standard errors are too large for these differences to attain statistical significance, it seems justified to distinguish between recipients of Swiss nationality, Western European immigrants, and immigrants from other countries in the estimation of WTP for income redistribution.

This distinction is also suggested by the insurance motive (see Section 2.1) because members of the first group are most likely to be net contributors to tax-financed redistribution and social security. Their rate of unemployment was three percent or less between 2000 and 2008 [see Lalive and Lehmann (2020)], followed by the second group with their somewhat higher rate of unemployment, and the third, whose rate of unemployment is above average. The same ranking is suggested by cultural distance, thus demand for redistribution in favor of one's own group is expected to be highest, followed by Western Europeans because they are not over-represented among the poor, contrary to migrants from the Balkan states, Africa, Middle East and South America (who together account for the bulk of immigrants from the rest of the world).

Hypothesis 3: *Demand for redistribution in favor of Swiss citizens is expected to be highest, followed by Western Europeans and by the rest of the world.*

3 Discrete Choice Experiment

Experimental design is predicated by Discrete Choice Experiments (DCE) approach. A DCE's crucial feature is that it permits to estimate MWTP values for each attribute in question, in contradistinction with the Contingent Valuation alternative. In view of Hypotheses 1 to 3, which are related to attributes of redistribution (recipients' groups of economic risk and their nationalities), this constitutes a decisive advantage. After expounding the theoretical foundations of a DCE, this section continues with a description of its specific design in view of the hypotheses to be tested.

3.1 Theoretical Foundations of a DCE

Discrete Choice Experiments (DCEs) are designed to measure individuals' preferences for characteristics of commodities, the so-called attributes. In contradistinction with classical Revealed Preference Theory, originating with Samuelson (1938), DCEs allow individuals to express their preferences for non-marketed as well as hypothetical products. During a DCE, respondents are repeatedly asked to compare the status quo with several hypothetical alternatives defined by their attributes including price. By varying the levels of attributes, a set of product alternatives is generated. Since a rational individual always chooses the alternative with the highest utility, the researcher can infer the utility associated with the attributes from observed choices. The proposed method, derived from the New Demand Theory of Lancaster (1971), is also known as Conjoint Analysis [Louviere et al. (2000)] that constitutes a multi-attribute valuation method.

The most prominent alternative to a DCE is Contingent Valuation (CV). A certain situation or product is described in detail, and respondents are asked to indicate their maximum WTP for this fixed product. Only its price is varied, contrary to Conjoint Analysis where all relevant attributes are varied simultaneously. While in a DCE the product is described in less detail than in a typical CV experiment, many product varieties can be created by varying the levels of relevant attributes [Louviere et al. (2000), p. 344]. This permits to take into account trade-offs among attributes and to estimate WTP values

of individual attributes (see below). Furthermore, strategic behavior of respondents is less likely than in CV with its exclusive emphasis on price, which facilitates strategic behavior. Finally, biases that easily occur when individuals are directly asked about their WTP are less frequently observed in DCEs [Ryan (2004)].

A particular advantage of a DCE in the present context is that it permits to explicitly impose the budget constraint through a price attribute in the guise of the tax share of income used to finance the transfers considered. Respondents can be made to simultaneously choose this share and hence the 'size of the pie' and its 'slices' devoted to different types of recipients (individuals in ill health, old age, etc.). Thus, trade-offs among different attributes of the good 'redistribution' can be determined, resulting in an assessment of their relative importance.

The econometric method used is based on Random Utility Theory [see Luce (1959), Manski and Lerman (1977) and McFadden (1974, 1981, 2001)]. Thus, individual i values alternative j according to the utility V_{ij} attained, which is given by

$$V_{ij} \quad = \quad v_i(a_j, p_j, y_i, s_i, \varepsilon_{ij}). \tag{1}$$

Here, $v_i(\cdot)$ denotes i's indirect utility function, a_j, the amount of attributes associated with alternative j, and p_j, the price. The individual's income and sociodemographic characteristics are symbolized by y_i and s_i, respectively. Finally, ε_{ij} denotes the error term, which is due to the fact that the experimenter never observes all arguments entering v_i, imparting a stochastic element to observed choices. As usual, the utility function is additively split into a systematic component $w(\cdot)$ and a stochastic one,

$$V_{ij} \quad = \quad w_i(a_j, p_j, y_i, s_i) + \varepsilon_{ij}.$$

Individual i will prefer alternative j to alternative l if and only if

$$w_i(a_l, p_l, y_i, s_i) + \varepsilon_{il} \quad \leq \quad w_i(a_j, p_j, y_i, s_i) + \varepsilon_{ij}. \tag{2}$$

Due to the presence of the stochastic term, only the probability P_{ij} of individual i choosing

alternative j rather than alternative l can be estimated, with

$$\begin{aligned} P_{ij} &= \text{Prob}\left[w_i(a_l, p_l, y_i, s_i) + \varepsilon_{il} \leq w_i(a_j, p_j, y_i, s_i) + \varepsilon_{ij}\right] && (3) \\ &= \text{Prob}\left[\varepsilon_{il} - \varepsilon_{ij} \leq w_i(a_j, p_j, y_i, s_i) - w_i(a_l, p_l, y_i, s_i)\right]. && (4) \end{aligned}$$

Thus, the probability of choosing j amounts to the probability of the systematic utility difference $w_i[j] - w_i[l]$ dominating the 'noise', $\varepsilon_{il} - \varepsilon_{ij}$. The error terms $\{\varepsilon_{il},\ \varepsilon_{ij}\}$ can be assumed to be normally distributed with mean zero and variances σ_l^2 and σ_j^2 as well as covariance σ_{lj}. Under these assumptions, $\varphi_{ij} := \varepsilon_{il} - \varepsilon_{ij}$ is also normally distributed with mean zero and variance $\sigma^2 := \text{Var}[\varphi_{ij}] = \sigma_l^2 + \sigma_j^2 - 2\sigma_{lj}$. Thus, equation (4) can be represented as

$$P_{ij} = \Phi\left(\frac{w_i(a_j, p_j, y_i, s_i) - w_i(a_l, p_l, y_i, s_i)}{\sigma}\right), \tag{5}$$

where $\Phi(\cdot)$ denotes the cdf of a standard normal distribution. This model is known as the binary probit model [cf. Ben-Akiva and Lerman (1985)]. Hensher et al. (1999) provided empirical evidence that a linear specification of the function $w(\cdot)$ leads to good predictions in its middle ranges. Therefore, one posits

$$w_i(a_j, p_j, y_i, s_i) = c_i + \sum_{k=1}^{K} \beta_k a_k + \varepsilon_{ij}, \tag{6}$$

where c_i represents an individual-specific constant, a_k, $k = 1, \ldots, K$, are the attributes of the alternative, and β_k, $k = 1, \ldots, K$, are the parameters to be estimated. These parameters can be interpreted as the (constant) marginal utilities of the corresponding attributes.

The marginal rate of substitution between two attributes m and n is given by

$$\text{MRS}_{m,n} = -\frac{\partial v/\partial a_m}{\partial v/\partial a_n}. \tag{7}$$

In the case of a linear utility function, this can be estimated by the ratio of the respective slope parameters,

$$\text{MRS}_{m,n} = -\frac{\hat{\beta}_m}{\hat{\beta}_n},$$

representing the marginal WTP for an additional unit of a_m expressed in units of a_n. Therefore, the marginal WTP for attribute a_m can be calculated by dividing the marginal utility of this attribute by the marginal utility of the price attribute [in our context, the income tax rate, see e.g. Telser (2002), p. 56]:

$$\text{MWTP}(a_m) \quad = \quad \frac{\partial v/\partial a_m}{\partial v/\partial p_j}. \tag{8}$$

By limiting the specification to the product attributes only (simple model, cf. Section 5.1), one obtains the following expression representing the difference in utility of individual i between alternative j and the status quo l,

$$\Delta V_{ij} \quad = \quad c_i + \sum_{k=1}^{K} \beta_k \Delta a_{kj} + \beta_p \Delta p_j + \varphi_{ij}, \tag{9}$$

where $\Delta c_i = c_{ij} - c_{il}$, $\Delta a_{kj} = a_{kj} - a_{kl}$, $\Delta p_j = p_j - p_l$, $\varphi_{ij} = \varepsilon_{ij} - \varepsilon_{il}$ for each $j \neq l$.

For econometric inference, it is important to take into account that the same individual makes several choices. A popular variant is the two-way random-effect specification, $\varphi_{ij} = \mu_i + \eta_{ij}$, where μ_i denotes the component that varies only across individuals but not across the choice alternatives. The terms μ_i and η_{ij} are assumed uncorrelated with the product attributes $(a_{i1}, \ldots, a_{iK})$ and between themselves. By a standard assumption in a probit model, $\sigma_\eta = 1$. Hence $\text{Var}[\varphi_{ij}] = \sigma_\eta^2 + \sigma_\mu^2 = 1 + \sigma_\mu^2$ and $\text{Corr}[\varphi_{ij}, \varphi_{il}] = \frac{\sigma_\mu^2}{1+\sigma_\mu^2} =: \rho$. The parameter ρ indicates how strongly the various responses are correlated with each other, or, equivalently, the share of the total variance that is explained by the individual-specific error term. The random-effects specification is justified if ρ is high and significant. Variances of marginal WTP values can be computed using the delta method [cf. Hole (2007)].

3.2 Experimental Design

The DCE was conducted with a representative sample of 979 respondents in the fall of 2008.[3] Respondents were mailed full decision sets including graphical representations of

[3]In principle, it would be appropriate to distinguish between Swiss and foreign-born respondents because foreign-born respondents might have a different ranking from that indicated in Hypothesis 1. However,

the status quo and alternatives and were asked to submit their binary choices during a telephone survey a few days later. In order to make sure that decisions were based on a homogeneous information set and made in a consistent way, respondents additionally received a detailed description of the attributes and their possible realizations. In the experiment, they were asked to choose the total amount of redistribution and its composition together with the share of personal income to be paid for each suggested alternative.

The attributes form four groups,

1. Shares of the total redistribution budget (to be spent on three groups, viz. Swiss citizens, Western European foreigners, and other foreigners);

2. Shares of the total redistribution budget (to be spent on five groups of recipients, viz. old-age pensioners, people in ill health, the unemployed, working poor, and families with children);

3. Total amount of redistribution, defined as a share of GDP;

4. Share of personal income to be paid by the respondent as tax to finance redistribution (the price attribute).

Table 1 shows the attributes and their levels. Prior to the experiment, the attributes and their levels used to define 'income redistribution' had been checked in two pretests for their relevance. While a public budget constraint in a one-period model would suggest that the total amount of redistribution as a share of GDP (REDIST in Table 1) should vary in step with the income tax as a share of personal income (TAX), this parallelism would cause perfect multicollinearity between REDIST and TAX. Yet the regression coefficient of TAX needs to be estimated with high precision because it enters the calculation of all WTP values [see eq. (8)]. Fortunately, respondents did not notice the lack of parallel changes in the two attributes.

since 94 percent of the respondents are born in the country (see Section 4.1), the pertinent subsample is too small to permit valid statistical inference.

Attribute	Label	Status Quo Level	Alternative Levels
Shares of benefits going to			
• Swiss citizens	CH	75%	60%, 85%
• Western European foreigners	WEU	10%	5%, 10%, 20%
• Other foreigners	OTH	15%	10%, 15%, 20%
Shares of benefits going to			
• Working Poor	WP	10%	5%, 15%
• Unemployed	UNEMP	15%	5%, 25%
• Old-Age Pensioners	PENS	45%	35%, 55%
• Families with Children	FAM	5%	10%
• People in ill health	ILL	25%	20%, 30%
Total amount of redistribution	REDIST	25% (of GDP)	10%, 20%, 30%, 40%, 50%
Income tax	TAX	25% (of personal income)	10%, 15%, 40%

Table 1: Attributes and their levels

The nine attributes and their levels result in a total number of possible scenarios that cannot be realized in an experiment. Let the scenarios define the n rows of the observation matrix X, with associated covariance matrix $\Omega = \sigma^2 (X'X)^{-1}$ of parameters β to be estimated. Then, so-called D-efficient design calls for the minimization of the geometric mean of the eigenvalues of Ω,

$$D \text{ efficiency} = \left(|\Omega|^{\frac{1}{K}} \right)^{-1},$$

where K denotes the number of parameters to be estimated [cf. Carlsson and Martinsson (2003)]. Using this optimization procedure and incorporating several restrictions with regard to budget sustainability[4], the number of alternatives was reduced to 35 and randomly split in five groups. One alternative was included twice in each decision set for a consistency test, resulting in eight binary choices per respondent. The Appendix shows the graphical representation of the status quo (Exhibit 1) and two selected alternatives (Ex-

[4]In particular, the difference between the share of GDP used for redistribution and the individual tax rate was not allowed to exceed 15 percent. Importantly, some discrepancy between these two variables had to be allowed for in order to avoid perfect multicollinearity.

hibits 2 and 3). These selected alternatives together with the status quo card exemplify the key feature of the DCE in that all attributes' values are allowed to vary simultaneously. The telephone survey also included questions covering a wide range of socioeconomic and behavioral characteristics of the respondents.

4 Descriptive Statistics

4.1 Socioeconomic Characteristics

The sample consists of 979 Swiss citizens, 70 percent of them residing in the German-speaking part and 30 percent in the French-speaking part of Switzerland. While 94 percent are born in the country, six percent are foreign-born. 50 percent are men; 20 percent have a monthly income below CHF 2,000 and 23 percent, above CHF 6,000; 27 percent are younger than 36 while 29 percent are at least 60 years of age (see Table 2). These characteristics reflect the structure of the Swiss population.

Some ten percent of respondents expect to become or to stay unemployed within the next two years (see Table 2). Further, when asked about the health status of their families, 53 percent of respondents stated that they themselves or their family members experience health problems (see Table 2).

Around 20 percent of respondents are working poor or expect to become working poor within the next five years; some 70 percent of the respondents are members of a family with children.

The information contained in the sample permits to test Hypotheses 1 and 2, which are based on the pocketbook voting, insurance, and imperfect altruism views of income redistribution, respectively.

4.2 Respondents' Choice Behavior

Information about respondents' choice behavior is of importance because the DCE needs to induce a sufficient number of changes between the status quo and the alternative to

Age groups	N	% of valid answers
18-35	264	27
36-59	435	44
60 and older	280	29
Total valid answers	979	100

Working poor expectation	N	% of valid answers
expect to be working poor	198	20
do not expect	781	80
Total valid answers	979	100

Unemployment expectation	N	% of valid answers
expect to be unemployed	97	10
do not expect	832	90
Total valid answers	929	100

Health status	N	% of valid answers
health problems	512	53
no health problems	458	47
Total valid answers	970	100

Family with children	N	% of valid answers
health problems	682	70
no health problems	287	30
Total valid answers	979	100

Table 2: Distribution of respondents' age, expectations to be working poor, unemployed within two years, and health status (including family members)

generate information about their preferences.

A total of $979 \cdot 8 = 7,832$ choices were observed, of which not quite 20 percent were in favor of an alternative over the status quo (see Table 3). This is a low percentage, for which there are at least four explanations. First, in spite of checking in the pretests, the levels of the attributes in the experiment may not have been sufficiently spread to induce respondents to switch, an experience made in the context of previous DCEs [see e.g. Leukert-Becker and Zweifel (2014)]. This is a natural consequence of the restrictions imposed on the difference between the total budget and the individual tax rate. Second, some attributes (e.g. benefits going to the working poor; see Table 5) may not have been sufficiently valued to cause switching. Third, there may be errors in decision making be-

Choices	N	in percent
alternative	1,562	19.94
status quo	6,088	77.73
no decision	182	2.32
Total	7,832	100

Table 3: Total number of choices

# choices for alternative	No.	in percent
0	209	21.35
1	309	31.56
2	226	23.08
3	131	13.38
4	57	5.82
5	16	1.63
6	10	1.02
7	0	0.00
8	5	0.51
Total valid answers	965	98.57
Missing	14	1.43
Sample	979	100

Table 4: Distribution of the numbers of chosen alternatives per respondent

cause the consistency test revealed 14 percent of choices to be inconsistent [which, however, is a value in the usual range, cf. e.g. Becker and Zweifel (2008)]. Finally, there may be a strong status quo bias in the face of a complex decision-making situation and the hypothetic nature of the alternative scenarios (see the large negative constant in Table 5). Still, only 21 percent of respondents never opted for an alternative (see Table 4), while almost 80 percent departed from the status quo at least once. This is reflected by the fact that only two respondents indicated sufficient difficulties in understanding the choice experiment.

5 Estimation Results

In the first part of this section, estimation results for simple model containing no more than the attributes specified in the DCE are presented. They suggest that the attributes of have empirical relevance, permitting to test Hypotheses 2 and 3. A test of Hypothesis 1 requires extending the model to include respondents' characteristics, which is undertaken in the second part.

5.1 Relevance of Product Attributes and Testing of Hypotheses 2 and 3

In Section 3.1, we derive the random utility model with product attributes as explanatory variables [see eq. (9)]. For the product attributes listed in Table 1, eq. (9) becomes

$$\begin{aligned} \Delta V_{ij} &= \beta_0 + \beta_1 \mathrm{WP} + \beta_2 \mathrm{UNEMP} + \beta_3 \mathrm{PENS} + \beta_4 \mathrm{FAM} + \beta_5 \mathrm{CH} + \beta_6 \mathrm{WEU} \\ &\quad + \beta_7 \mathrm{REDIST} + \beta_8 \mathrm{TAX} + \varphi_{ij}, \end{aligned} \tag{10}$$

where variables ILL and OTH are excluded to avoid perfect multicollinearity.

In order to test Hypotheses 2 and 3, we perform two adjustments in view of Table 1. First, let a respondent allocate 15 percent of the redistributive budget to the working poor (WP), while opting for 20 percent of the GDP being devoted to redistribution (REDIST). This implies that the preferred share of GDP going to the working poor amounts to three percent in this case. Let another citizen also allocate 15 percent of the total to WP but 40 percent to REDIST. This time, the preferred share of the GDP in favor of WP is six percent. To reflect this difference, WP needs to be scaled to become $\widetilde{\mathrm{WP}} = \mathrm{WP}{\cdot}\mathrm{REDIST}$, and similarly for the other shares of benefits listed in Table 1. The second adjustment is that the two adding-up restrictions inherent in Table 1 need to be imposed,

$$\widetilde{\mathrm{WP}} + \widetilde{\mathrm{UNEMP}} + \widetilde{\mathrm{ILL}} + \widetilde{\mathrm{FAM}} + \widetilde{\mathrm{PENS}} = \mathrm{REDIST} \tag{11}$$

$$\widetilde{\mathrm{CH}} + \widetilde{\mathrm{WEU}} + \widetilde{\mathrm{OTH}} = \mathrm{REDIST}. \tag{12}$$

Variable	Coeff.	SE	z	$P > \|z\|$	Marginal effect	WTP, % of inc.
Recipient's Nationality						
1. $\widetilde{\text{CH}}$ if $\widetilde{\text{WEU}}$ excluded	0.01494	0.01420	1.05	0.293	0.00381	0.73
2. **$\widetilde{\text{CH}}$ if $\widetilde{\text{OTH}}$ excluded**	0.10146	0.01819	5.58	0.000	0.02587	4.93
3. **$\widetilde{\text{WEU}}$ if $\widetilde{\text{OTH}}$ excluded**	0.08652	0.02682	3.23	0.001	0.02206	4.20
Recipients' Social Group						
4. $\widetilde{\text{FAM}}$ if $\widetilde{\text{WP}}$ excluded	0.05374	0.02805	1.92	0.055	0.01370	2.61
5. $\widetilde{\text{FAM}}$ if $\widetilde{\text{PENS}}$ excluded	0.07942	0.02660	2.99	0.003	0.02025	3.86
6. $\widetilde{\text{FAM}}$ if $\widetilde{\text{UNEMP}}$ excluded	0.09795	0.02751	3.56	0.000	0.02498	4.75
7. **$\widetilde{\text{FAM}}$ if $\widetilde{\text{ILL}}$ excluded**	0.15181	0.02975	5.10	0.000	0.03871	7.37
8. $\widetilde{\text{WP}}$ if $\widetilde{\text{PENS}}$ excluded	0.02569	0.01708	1.50	0.133	0.00655	1.25
9. $\widetilde{\text{WP}}$ if $\widetilde{\text{UNEMP}}$ excluded	0.04421	0.01740	2.54	0.011	0.01127	2.15
10. **$\widetilde{\text{WP}}$ if $\widetilde{\text{ILL}}$ excluded**	0.09808	0.02398	4.09	0.000	0.02501	4.76
11. $\widetilde{\text{PENS}}$ if $\widetilde{\text{UNEMP}}$ excluded	0.01853	0.00818	2.27	0.023	0.00472	0.90
12. **$\widetilde{\text{PENS}}$ if $\widetilde{\text{ILL}}$ excluded**	0.07239	0.01693	4.28	0.000	0.01846	3.51
13. **$\widetilde{\text{UNEMP}}$ if $\widetilde{\text{ILL}}$ excluded**	0.05387	0.01759	3.06	0.002	0.01374	2.61
TAX (for any specification)	-0.02060	0.00180	-11.42	0.000	-0.00525	–
CONSTANT (for any specification)	-0.92929	0.02969	-31.30	0.000	-	-45.11

Note: Bold entries show preferred specifications.

Table 5: Summary of random-effects probit estimates for different model specifications.

Being an important attribute on its own, REDIST needs to be included in the estimation, which means that one of its components must be excluded from both eqs. (11) and (12). The choice of exclusion restriction is arbitrary but might affect estimated MWTP values[5]. This effect is analogous to an omitted variable bias, whose size varies with the

[5]Note that the situation is not the same as selecting the reference category for a dummy variable in a linear regression model, which is known to leave coefficient estimation unchanged. Since probit estimation is non-linear, moving the reference value of the regressor up or down affects the estimated slope along the

absolute value of the pertinent coefficient [Greene (2000), p. 334]. Preliminary regressions indicated that $\widetilde{\text{FAM}}$ has the highest coefficient, followed by $\widetilde{\text{WP}}$, $\widetilde{\text{PENS}}$, $\widetilde{\text{UNEMP}}$, and finally $\widetilde{\text{ILL}}$. Similarly, $\widetilde{\text{CH}}$ was found to dominate $\widetilde{\text{WEU}}$, which in turn dominated $\widetilde{\text{OTH}}$. This suggests the following regression strategy for implementing restriction (11). Start with $\widetilde{\text{FAM}}$, checking for omitted variable bias caused by excluding the less important attributes one at a time. Next, turn to second-ranking $\widetilde{\text{WP}}$ without excluding $\widetilde{\text{FAM}}$ because this would cause an unnecessary amount of bias. By the same token, it would make little sense to exclude $\widetilde{\text{FAM}}$ and $\widetilde{\text{WP}}$ when focus is on $\widetilde{\text{PENS}}$, and similarly for $\widetilde{\text{UNEMP}}$. The same strategy was applied to restriction (12).

For example, the WTP estimates entered on lines No. 1 and 12 of Table 5 are derived from the model

$$\begin{aligned}\Delta\tilde{V}_{ij} &= c_0 + \beta_1\widetilde{\text{WP}}_j + \beta_2\widetilde{\text{UNEMP}}_j + \beta_3\widetilde{\text{ILL}}_j + \beta_4\widetilde{\text{FAM}}_j + \\ &\quad +\beta_5\widetilde{\text{CH}}_j + \beta_6\widetilde{\text{WEU}}_j + \\ &\quad +\beta_7\text{REDIST}_j + \beta_8\text{TAX}_j + \varphi_{ij}. \qquad (13)\end{aligned}$$

Estimation results are displayed in Tables 5 and 6. As was to be expected, the coefficient and marginal effect of $\widetilde{\text{FAM}}$ are most strongly affected when second-ranking $\widetilde{\text{WP}}$ is excluded. The preferred estimate appears on line No. 7, with $\widetilde{\text{ILL}}$ excluded. For $\widetilde{\text{WP}}$, it is the one on line No. 10, and for $\widetilde{\text{PENS}}$, on line No. 12. With regard to recipient's nationality, the estimate with smaller bias presumably is the one on line No. 3 rather than No. 2. However, regardless of the exclusion restriction imposed, a higher share of the GDP devoted to any of the types of beneficiaries and nationalities has positive utility, while the price attribute (TAX) is negatively valued. Finally, the negative constant points to status quo bias.

Based on the preferred specifications (in lines 7, 10, 12, and 13 of Tables 5 and 6), Hypothesis 2 receives a considerable measure of confirmation. Among the beneficiaries that cannot count on insurance, families with children rank first, followed by the working poor as predicted (the difference is significant). As to the beneficiaries enjoying insurance

sigmoid function.

In favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
1. CH	WEU	0.73	33.47	37.97
2. **CH**	**OTH**	4.93	227.31	54.61
3. **WEU**	**OTH**	4.20	193.83	75.52
4. FAM	WP	2.61	120.40	75.59
5. FAM	PENS	3.86	177.94	71.82
6. FAM	UNEMP	4.75	219.45	75.89
7. **FAM**	**ILL**	7.37	340.13	83.55
8. WP	PENS	1.25	57.55	45.64
9. WP	UNEMP	2.15	99.05	47.54
10. **WP**	**ILL**	4.76	219.73	66.34
11. PENS	UNEMP	0.90	41.50	22.87
12. **PENS**	**ILL**	3.51	162.19	47.76
13. **UNEMP**	**ILL**	2.61	120.68	47.53
CONSTANT		-45.11	-2081.99	223.36

Note: Bold entries show preferred specifications.

Table 6: Mean marginal WTP values for reallocation of the redistributive budget between two groups of beneficiaries (in % of monthly disposable income and in CHF, 1 CHF = 0.88 $ in December 2008)

protection, pensioners precede the unemployed, again as predicted (here, the difference is insignificant). Contrary to Hypothesis 3, however, the MWTP for people in ill health is lowest of all[6], causing them to be defined as the residual category (see above).

[6]A possible explanation for this result is the high amount of redistribution in Switzerland induced by its premium subsidization scheme. While competitive social health insurers must apply community rating, the insured receive a subsidy as soon as their premium exceeds a share of taxable income which varies between 8 and 12 percent, depending on the canton. In addition, there is a risk adjustment scheme which ultimately makes the 'good' risks pay even more to the benefit of 'bad' ones [see Zweifel and Frech (2016)]. Overall, respondents may have deemed redistribution in favor of people in ill health excessive in the status quo.

Hypothesis 3, revolving around imperfect altruism, is derived from insurance theory. The preferred specifications (corresponding to lines No. 2 and No. 3 of Tables 5 and 6) indicate that the MWTP for redistribution is in favor of Swiss citizens, followed by Western European nationals to the detriment of other nationalities (the dominated and hence residual category). Since the difference between the coefficients is not significant, this constitutes partial confirmation only of Hypothesis 3, which predicts a clear preference for redistribution benefitting Swiss nationals over one benefitting Western Europeans.

The estimation results obtained in this section do not allow to identify the presence of effects of imperfect altruism or insurance motivation. In order to be able to perform this identification, the attributes of income redistribution need to be interacted with the socioeconomic characteristics of the respondents. This calls for an extension of the basic model, to be presented below.

5.2 Extended Models: Testing Hypothesis 1

Hypothesis 1 of Section 2.2 makes predictions regarding differences in MWTP values between groups of respondents. The covariates of interest are experiences of and expectations about income level, expectations about unemployment, age, family status and health status.

5.2.1 Extended Model 1: Being Working Poor Increases Demand for Income Support in Favor of the Working Poor (Hypothesis 1A)

In order to estimate *ceteris paribus* effects, the attributes listed in Table 1 are interacted first with D_WP, a dummy variable indicating that the respondent is employed but belongs to the group with individual income below 2000 Swiss francs or expects to belong to this income group within 5 years. This gives rise to a first of five sets of interaction terms extending eq. (13). This extended model allows a test of Hypothesis 1A, stating that the demand for income support in favor of the working poor is particularly high among citizens who are currently working poor or expect to become working poor.

in favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
(A) WP	UNEMP	0.75	37.19	53.91
(B) WP	PENS	1.21	60.00	48.67
(C) FAM	WP	2.60	128.93	111.16
(D) WP	ILL	6.31	312.91	80.45

Table 7: Marginal WTP values for attributes (in % of monthly disposable average income) derived for the respondents who belong to or expect to be working poor within 5 years

Here, we observe only one statistically significant difference in preferences between respondents with these expectations and others (entries A, B, C, D in Table 7 correspond to entries 9, 8, 4, 10 in Table 6, respectively). Marginal WTP for a reallocation of one percent of GDP from people in ill health to the working poor exhibited by this group (line D) is 6.31 percent of monthly income, even significantly higher that the rather large value in the general population (4.76 percent, line 10), thus supporting the hypothesis. However, when it comes to the question of whether the social budget should more strongly benefit the working poor to the detriment of the unemployed (line A) and the old-age pensioners (line B), the working poor do not exhibit a value that significantly differs from that in the general population. A possible explanation is that the risks of becoming working poor and unemployed are highly correlated, causing citizens subject to them to demand both types of social insurance for extra protection. As to a possible reallocation away from families with children, working poor respondents are against, exhibiting a marginal WTP of -2.60 percent of monthly disposable income (line C), in line with -2.61 in the general population (line 13 of Table 6). This surprising result suggests a limited effect of pocketbook voting among the working poor (with regard to ill people) and even insurance-motivated generosity with regards to families with children (given the rather high likelihood of a family with children to become working poor). Thus, Hypothesis 1A cannot be accepted in its entirety.

5.2.2 Extended Model 2: Experiences of and Expectations for Unemployment Increase Demand for Unemployment Support (Hypothesis 1B)

This time, equation (13) is complemented with all attributes interacted with the dummy variable D_UEXP, indicating that the respondent expects to become or remain unemployed during the next two years. This extended model allows a test of Hypothesis 1B, stating that the demand for unemployment support is particularly high among citizens with expectations to lose their job or to remain unemployed.

in favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
(E) WP	UNEMP	5.34	264.80	118.86
(F) PENS	UNEMP	1.02	50.73	45.27
(G) FAM	UNEMP	-4.12	-204.32	157.61
(H) UNEMP	ILL	-0.88	-43.73	91.43

Table 8: Marginal WTP values for attributes (in % of monthly disposable average income) derived for the respondents who expect to be unemployed during the next two years

Here, we observe two statistically significant differences in preferences between respondents with these expectations and others (entries E, F, G, H in Table 8 correspond to entries 9, 11, 6, 13 in Table 6, respectively). Marginal WTP for a reallocation of one percent of GDP from the unemployed to families with children exhibited by this group (line G) is -4.12 percent of monthly income, significantly lower than for the general population (4.75 percent, line 6), thus supporting the hypothesis. However, when it comes to the question of whether the social budget should more strongly benefit the unemployed to the detriment of people in ill health (line H), those who expect to be unemployed are surprisingly against this as well, exhibiting a marginal WTP of -0.88 compared to +2.61 percent of monthly disposable income in the general population (line 13 of Table 6). Thus, Hypothesis 1B cannot be accepted in its entirety.

5.2.3 Extended Model 3: Age 60+ Increases Demand for Old-Age Pensions (Hypothesis 1C)

Next, we interact the attributes first with D_AGE60$^+$, a dummy variable indicating that the respondent is at least 60 years old. Re-estimation of equation (13) with all the attributes in linear and interacted form (using D_AGE60$^+$), imposing the exclusion in line No. 4 of Table 5, and using eq. (8) results in the WTP values displayed in Table 9 (entries I, K, L, M correspond to entries 5, 8, 11, 12 in Table 6).

in favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
(I) FAM	PENS	5.13	231.89	83.80
(K) WP	PENS	0.47	21.05	62.35
(L) PENS	UNEMP	0.64	28.79	28.71
(M) PENS	ILL	3.35	151.49	49.95

Table 9: Marginal WTP values for attributes (in % of monthly disposable average income and CHF) derived for the age group 60 and older

Among respondents aged 60 or more, WTP for reallocating one percent of GDP to families to the detriment of pensioners amounts to 5.13 percent of the average monthly income in the sample. This is even higher than the 3.86 percent across all groups (see line No. 5 of Tables 5 and 6). This is a contradiction of Hypothesis 1A, stating that the demand for redistribution favoring old-age pensioners is expected to be particularly high in the group aged 60 and more. In turn, WTP for reallocating one percent of GDP to the working poor is lower in this group (0.47 percent compared to 1.25 percent of income in line No. 8 of Table 6), but statistical significance is lacking. In the two cases where pensioners stand to benefit, WTP values in lines L, M of Table 9 are again below those of Table 6 (see lines No. 11 and 12). On the whole, Hypothesis 1C has to be rejected.

5.2.4 Extended Model 4: Having and Expecting to Have Children Increase Demand for Support of Families with Children (Hypothesis 1D)

Here, equation (13) is complemented with all attributes interacted with the dummy variable D_FAMCHI, which indicates that the respondent has or expects to have at least one child. This extended model allows a test of Hypothesis 1D, stating that the demand for benefits in favor of families with children is particularly high among respondents with children.

in favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
(N) FAM	WP	2.79	133.50	69.09
(O) FAM	UNEMP	4.16	199.05	65.57
(P) FAM	PENS	3.81	174.69	60.47
(Q) FAM	ILL	7.91	362.67	68.97

Table 10: Marginal WTP values for attributes (in % of monthly disposable average income) derived for the respondents who have children

This subset of respondents indeed exhibits a WTP to reallocate public budget in favor of families with children to the detriment of all groups of recipients. These WTP values are not only statistically significant but also significantly higher than in the population on average, as indicated by a comparison of lines N, O, P, Q in Table 10 with entries 4, 5, 6, 7 in Table 6, respectively. Therefore, Hypothesis 1D is confirmed in its entirety.

5.2.5 Extended Model 5: Unfavorable Health Status in the Family Increases Demand for Support of People in Ill Health (Hypothesis 1E)

Finally, we consider an extension of the basic model by including the dummy variable D_ILLFAM for the health status of respondents' family members and themselves. Hypothesis 1E states that WTP for redistribution in favor of people in ill health is expected to be especially high among those who experience health problems, including their close relatives.

However, estimation results (see Table 11 with entries R, S, T, U corresponding to

in favor of	to the detriment of	WTP in % of income	WTP in CHF	SE in CHF
(R) WP	ILL	4.41	202.93	65.62
(S) UNEMP	ILL	3.09	142.11	43.57
(T) PENS	ILL	3.57	164.60	42.22
(U) FAM	ILL	6.51	299.79	82.67

Table 11: Marginal WTP values for attributes (in % of monthly disposable average income) derived for the respondents who experience health problems among their relatives

entries 10, 13, 12, 7 of Table 6) suggest that family health status does not have an impact on preferences for the composition of the redistribution portfolio. For example, respondents with health problems have a WTP amounting to 4.41 percent of average income for redistributing income in favor of the working poor to the detriment of people in ill health (line R), no different from the 4.76 percent in the general population (line 10 of Table 6). The 'no difference' finding also holds true for the other three ways to distribute income away from the unemployed (lines S, T, U of table 11 compared to lines 13, 12, 7 of Table 6). Therefore, Hypothesis 1E fails to be confirmed.

6 Conclusion and Discussion

In this paper, Swiss citizens' marginal willingness to pay (MWTP) for changes in the composition of the public redistributive budget is estimated through a discrete choice experiment (DCE). The theoretical background is provided both by the pocketbook voting, insurance and imperfect altruism views of income redistribution. The hypotheses derived from these views are exhibited in Table 12, along with their degrees of confirmation.

On the whole, this study suggests that the insurance motive as an explanation of the demand for income redistribution is more convincing than the 'pocketbook' alternative. This is the more remarkable as the design of this Discrete Choice Experiment permits respondents to express their preferences not only concerning the total amount of redistribution but also with regard to the allocation of the available funds to competing uses.

Determinant category	Hypothesis and prediction	Confirmed?
Economic: Pocketbook Voting	**1A**: *Demand for redistribution in favor of the working poor is expected to be higher among citizens who belong to or expect to become working poor, compared to others.*	**Partially** (Tables 7 and 6)
	1B: *Demand for redistribution in favor of the unemployed is expected to be higher among citizens who expect to become or to stay unemployed, compared to others.*	**Partially** (Tables 8 and 6)
	1C: *Demand for redistribution in favor of the old-age pensioners is expected to be highest among citizens near and beyond the retirement age.*	**No** (Table 9 and 6)
	1D: *Demand for redistribution in favor of families with children is expected to be higher among citizens with children, compared to others.*	**Yes** (Tables 10 and 6)
	1E: *Demand for redistribution in favor of people in ill health is expected to be higher among citizens who experience health problems themselves or have relatives with health problems, compared to others.*	**No** (Tables 11 and 6)
Economic: Insurance	**H2**: *Demand for redistribution is expected to be highest when it benefits families with children, followed by the working poor. It is expected to be markedly lower when it benefits pensioners, people in ill health, and the unemployed due to generous insurance coverage.*	**Yes** (Table 5)
Behavioral: Imperfect altruism	**H3**: *Demand for redistribution in favor of Swiss citizens is expected to be highest, followed by Western Europeans and by the rest of the world.*	**Partially** (Tables 5 and 6)
Political	n.a.	n.a.

Table 12: Overview of hypotheses and outcomes of tests

It is in this second context where the insurance motive should become important in principle because individuals can predict to some extent the allocation that may be in their future interest. However, some of the evidence points to other motives for income redistribution, in particular pure altruism among the aged in favor of younger segments of the population who bear the burden of raising a family while facing the risks of becoming working poor and a person in ill health. Altruism, at least of the imperfect variety, may also be at work because there is positive MWTP for redistribution in favor of Western European migrants to Switzerland.

It would be worthwhile to explore the precise role of imperfect altruism in future work. While perfect altruism does not put constraints on how to slice the pie in public redistribution policy, imperfect altruism conditions citizens' support of policy on the perceived social and cultural distance between contributors and beneficiaries. The suggestion for policy that can be drawn from the available evidence is that programs designed to modify the distribution of income need to take this distance into account in order to find the support of a majority of citizens.

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A Appendix

Exhibit 1: Status Quo Card (current state of redistribution)

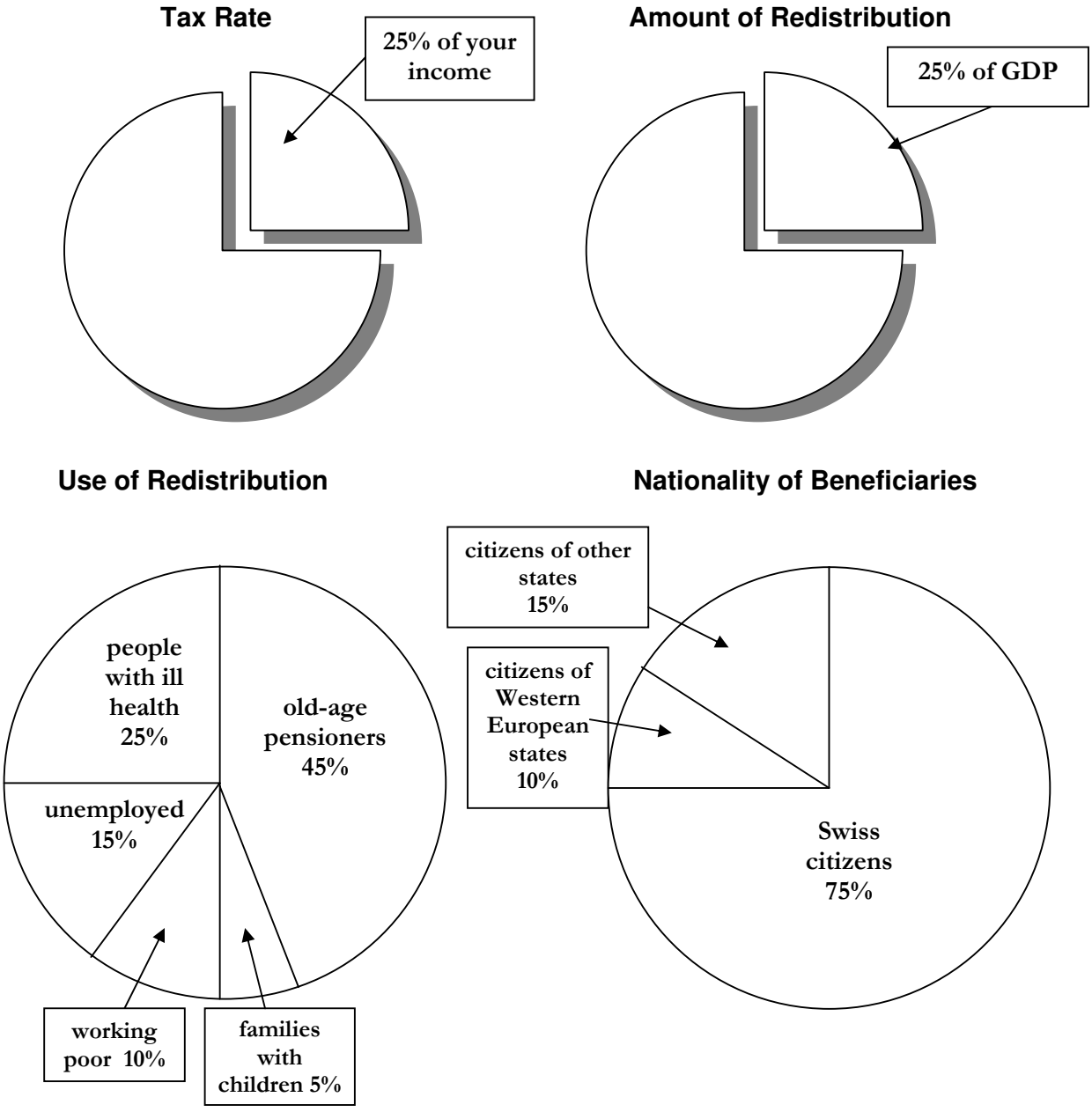

Exhibit 2: Card for Alternative No. 1

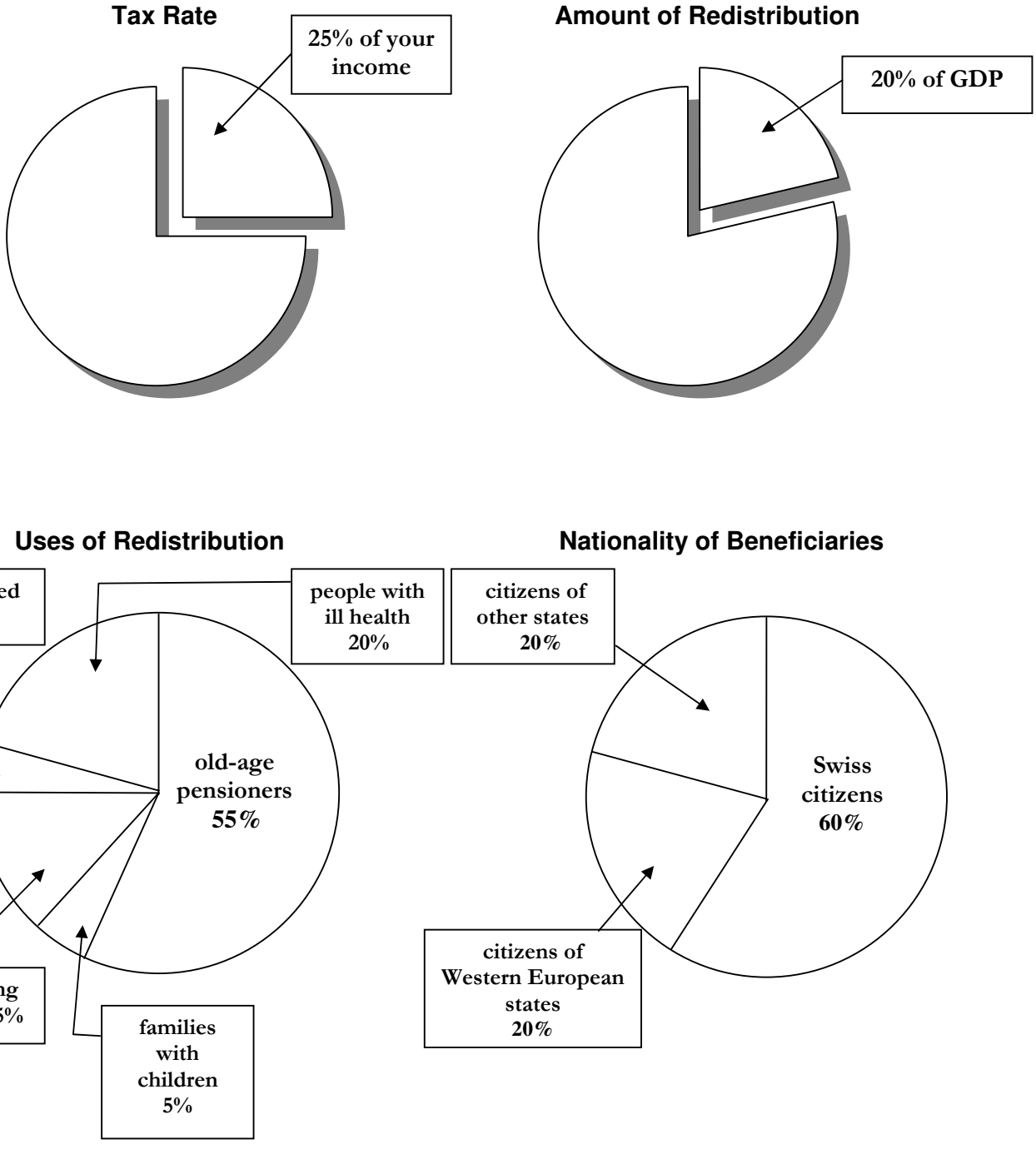

Exhibit 3: Card for Alternative No. 2