

ENDOGENIZING FAIRNESS TO EXPLAIN PREFERENCES FOR REDISTRIBUTION

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Abstract

Why some people believe that social mobility may result in a fair distribution of income? We hypothesize that a person who enjoys higher levels of subjective freedom is more likely to consider fair the process that determines the distribution of income. As a consequence, such a person will be less supportive of redistribution. We test this claim via a bivariate ordered probit procedure which allows us to endogenize fairness in the process of social mobility. The results obtained strongly support our hypothesis. Our findings represent an important development in the empirical literature on the determinants of people's preferences for redistribution where the level of fairness in income dynamics has been always treated exogenously.

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1 Introduction

Why the society's poor majority does not expropriate the income from the wealthy minority through large scale redistributions? One way to answer this question is to argue that a fraction of individuals in society is not motivated by rational self-interested utility maximization, but rather it behaves according to some notion of fairness. Generally speaking, two different concepts of fairness can be distinguished in the literature (Konow, 2003). The first is based on an egalitarian view of society in which the ideal of equality as the distributive outcome is emphasized (Fehr and Schmidt, 1999; Galasso, 2003). The second is based on a procedural notion of justice that stresses the process that leads to different income distributions. In this process all the agents involved ought to enjoy equal opportunities to obtain a satisfactory outcome (Frey, Benz and Stutzer, 2004; Benz, 2005).

In this paper we focus on the procedural notion of fairness by concentrating on that branch of the literature which argues that people's beliefs about the causes of wealth and poverty shape citizens' preferences for redistribution. The relationship between the perceived fairness of the division of wealth and the legitimation of the income dynamics that brought it about has been extensively investigated in the literature. Several scholars consider some sources of inequality legitimate and others unjust on the basis of the perceived fairness in the process through which social mobility occurs. The greater the perception that citizens face different probabilities of improving their economic conditions, the lesser their preferences for flattening income differences through redistributive schemes (Benabou and Tirole, 2006; Piketty, 1995).

However, the different probabilities for individuals to improve their economic conditions can be either justified or opposed on the basis of the competing roles that factors such as skills, work, luck and connections have in determining income differences. Alesina and Angeletos (2005) argue that the more an individual believes that effort, commitment and merit are justly rewarded in life, the more he tolerates existing inequalities and the less favors redistribution. On the contrary, the more an individual

believes that luck, privilege and personal connections determine economic success, the more he opposes existing inequalities and the more favors redistribution. In this perspective, therefore, fair individuals are not expected to behave selfishly by the standard of the egoistic agent. Rather, they are driven by a sense of justice based on their views about the moral worthiness of the recipients of the public transfers (Fong, 2006). In the same vein, extensive experimental literature shows that preferences for redistribution may be dictated by a sense of fairness or aversion to inequality (Durante and Putterman, 2007; Cowell and Schokkaert, 2001; Fröhlich and Oppenheimer, 1992).

The objective of this paper is twofold. First, we demonstrate that the level of subjective freedom people enjoy determines their preferences for redistribution. It is important to note from the outset that by subjective freedom we mean the extent of freedom of choice and control an individual enjoys over the way his life turns out. Our second objective is to point out that the existing literature on the relationship between people's opinion about the fairness of income dynamics and their tastes for redistribution suffers from the causal fallacy of joint effects since the latter has been held to be independently determined by the former. In this respect, we show that the effect of subjective freedom on the individuals' support for income transfers is exercised both directly and through the opinions individuals hold about how fair they believe the process of social mobility is, i.e. the extent to which they enjoy equality of opportunity in the game of life.

We use data from the *World Values Survey* to analyze the relationship between the individuals' level of subjective freedom, their perception of fairness in the opportunities the game of life offers to them and their preferences for redistribution. We collect information for more than 51.000 individuals across 47 countries over the period 1994-98. Using single equation methods, we are able to reproduce the results of the existing literature on the effect of individuals' perceived fairness in opportunities and their preferences for redistribution. We then endogenize people's opinions about the existing fairness in the game of life as determined by the extent of their subjective freedom. Three results emerge from the econometric estimation. First, the higher the level of

the individual's subjective freedom, the less he favours redistribution. Second, the extent of subjective freedom enjoyed by an individual affects his opinions about the existing level of equality of opportunities in society. Third, when we estimate the individual's opinions about the fairness of opportunities as an endogenous variable, we find that its effect is generally amplified by that of the subjective freedom. The results of the empirical analysis are robust to different measures of individuals' preferences for redistribution as well as different measures of individuals' beliefs about fairness in the individuals' opportunities in the game of life.

The findings of our empirical analysis lead us to draw some important conclusions relevant for the policy implications that they bring about. The level of subjective freedom retained by an individual is the primary and fundamental cause that affects his preferences for redistribution. This implies that, in the attempt to reduce public welfare spending, a government focussing on the individual's views about the working of the process of social mobility may implement ineffective policy choices. In this context, government intervention aimed at influencing the extent of subjective freedom enjoyed by individuals through the enhancement of freedom of choice in the market of public services can create a more favorable environment for welfare reforms that cut on welfare spending without compromising the incumbent government's public support.

The paper is organized as follows. In Section 2 we present the theoretical hypotheses. In Section 3 we describe the methodology and the data used in the empirical investigation which we carry out to prove our claims. In Section 4 we show the estimation results and comment on our findings. Finally, in Section 5 we draw some concluding remarks.

2 The theoretical hypotheses

One important explanation for people's taste for redistribution is associated with their opinion about whether an existing level of inequality is considered either fair or unfair. In this perspective, individuals living in societies where it is widely shared the

perception that people deserve their economic status, consider the existing income distribution as fair, no matter how unequal it might be (Benabou and Tirole, 2006). Societies in which people believe that the poor have good chances of escaping out of poverty are more likely to accept income differences than those in which the degree of income mobility is low (Benabou and Ok, 2001). In the same manner, most people do seem to distinguish between wealth accumulation determined by luck, privilege and connection and that determined by effort and hard work. This distinction has proved to be relevant in shaping preferences for income transfers (Alesina and Glaeser, 2004; Alesina and Angeletos, 2005).

The above considerations clearly point out that fairness in social mobility matters for people's taste for redistribution. However, in the empirical literature on the determinants of the individuals' preferences for income transfers fairness has been always treated exogenously (for a review of the related literature see Alesina and Giuliano, 2010). This perspective neglects important considerations about what determines people's perceptions that a given society enjoys high rather than low income mobility. In this paper we question the exogeneity of people's sense of fairness in social mobility and suggest that it is affected by the extent of freedom of choice and control individuals possess over the way their life turns out (Bavetta, Maimone and Navarra, 2009).

Why should people consider some social dynamics determining the distribution of income justifiable and others unfair? Why should people believe that income mobility may result in a fair distribution of income? Why should people perceive that the poor are in need because of laziness rather than because of the working of an unfair society? We argue that one way of answering these questions is freedom in decision-making.

In this study we suggest that a person who believes to be in a position of making free choices that express volitional control over the way his life turns out is more likely to consider fair the process that determines the distribution of income. As a consequence, such a person will be less supportive of redistribution. More specifically, we argue that the individual's level of free choice and control over his decision making affects directly as well as indirectly his preferences for redistribution. Let us now discuss these two

effects and describe how we can derive from them two theoretical hypotheses whose factual validity will be tested in the empirical part of this study.

The direct effect of free choice and control on the individual's preferences for redistribution arises from the fact that a person develops his tastes for income transfers out of a principle of procedural fairness that operates at the *individual level*. Consider a person who recognizes his achievements as the outcome of a decision process in which he expresses free choices and exercises control over his actions. Such a person is more likely to perceive achievements as deserved, no matter whether they are successes or failures. In this perspective, the greater the responsibility that a person feels to retain over the way his life takes shape, the more likely he believes that his actual position in the income ladder is just and the process that brought it about fair. The opposite applies for a person who believes to enjoy low levels of free choice and control over his decision making. The lower an individual's level of free choice and control, the less he believes to be responsible of his actions and behaviors, the less accountable he feels to be as far as his income level is concerned. Therefore, whatever his own economic status might be, he thinks that it is not deserved. In this perspective, transfers are necessary to compensate unfairness in the income generation process, no matter whether the individual is the donor or the recipient of the transfer itself.

The principle of procedural fairness operating at the individual level just described above leads us to state the following testable theoretical hypothesis:

- H1 The higher the individual's extent of freedom of choice and control over his life, the less his support for redistribution.

The indirect effect of free choice and control on the individual's preferences for redistribution stems from the fact that a person develops his preferences for redistribution out of a principle of procedural fairness that operates at the *societal level*. Consider a person who believes to be the master of his own life. As argued above, such a person thinks that he lives in a just world in which what he gets is deserved. We hypothesize that such a belief is likely to affect that person's opinion about the

working of the process of income mobility in society. The more an individual thinks himself accountable for the way his own life turns out, the more he believes that other individuals are generally responsible for their economic status. In this view, income distribution in society is perceived as being the outcome of a fair process of social mobility in which each person gets what he deserves and in which the today poor may become rich tomorrow and *vice versa*. In this perspective, individuals who believe to live in a dynamic society that rewards merit do not support redistribution.

The extension of the principle of procedural fairness from the individual to the societal level allows us to develop the following testable theoretical hypothesis:

H2 The higher the individual's level of free choice and control over his life, the fairer he perceives the process determining the wealth and poverty in society, the less he supports redistribution.

This hypothesis implies that the more an individual enjoys freedom of choice and control in decision making, the more likely he feels to live in a mobile society in which the poor are not condemned to stay in need, but have fair chances to escape out of poverty.

Before turning into the description of the statistical methodology and the data, it is important to note once more that H2 introduces endogeneity in the impact of people's concerns about fairness on their preferences for redistribution. This fact represents an important development in the empirical literature on the determinants of people's attitudes toward income transfers since the perceived level of fairness in the income dynamics in such a literature has been always treated exogenously.

3 The methodology and the data

To empirically evaluate whether an individual's sense of fairness in the process of social mobility is an endogenous determinant of his preferences for redistribution and whether these preferences are driven by the extent of his subjective freedom, we carry out a

bivariate ordered probit (BOP) model (Sajaia, 2008). In this section we discuss the empirical methodology, illustrate the identification strategy and describe the estimated equations and, finally, we present the data that will be used in the econometric analysis.

3.1 The empirical methodology

In order to carry out our empirical analysis, we consider the following model referring to the $i = 1..N$ individuals in our sample:

$$y_i^* = \mathbf{x}_i' \beta + \varepsilon_i \tag{1}$$

where y_i^* is a latent dependent variable, \mathbf{x}_i is a vector of regressors, β is the row of coefficients to be estimated and ε_i is the error term.

The latent variable y_i^* can take J outcomes. These are observed when y_i^* crosses progressively higher thresholds which are unknown parameters to be estimated. The latent variable y_i^* is related to the possible observable values through the function $y_i = j$ if $\mu_h < y_i^* \leq \mu_{h+1}$, $h = 1 \dots J - 1$.

More specifically, we have:

$$\begin{aligned} y_i = 1 & \quad \text{if } y_i^* \leq \mu_1 \\ y_i = 2 & \quad \text{if } \mu_2 < y_i^* \leq \mu_2 \\ & \quad \cdot \quad \quad \quad \cdot \\ y_i = J & \quad \text{if } \mu_{J-1} \leq y_i^* \end{aligned}$$

where the μ s are the unknown thresholds.

The above model can be easily estimated using an ordered probit estimator. However, estimation may be inconsistent if the set of regressors contains a potentially endogenous covariate. Let us assume that this is the case and that there exists a covariate, z_i^* contained in the vector \mathbf{x}_i , which is endogenous. We may reformulate our structural model in the following way:

$$y_i^* = \mathbf{w}'_i \beta + \varepsilon_i \quad (2)$$

$$z_i^* = \mathbf{k}'_i \gamma + \eta_i \quad (3)$$

where \mathbf{w}_i is the vector, including both the exogenous regressors and the endogenous one, z_i^* , and \mathbf{k}_i contains only exogenous covariates.

We also assume that z_i^* is a latent variable. Therefore, we cannot observe its possible values, R , unless it crosses progressively higher thresholds. The variable z_i^* is related to the possible values through the function $z_i = r$ if $\rho_q < z_i^* \leq \rho_{q+1}$, $q = 1 \dots R - 1$.

The source of endogeneity in equation (2) emanates from the potential correlation between the endogenous covariate and the error term. Let us assume the following structure for the error term:

$$\begin{bmatrix} \varepsilon_i \\ \eta_i \end{bmatrix} \underset{i.i.d.}{\sim} N \begin{bmatrix} \sigma_{y_i^*}^2 & \sigma_{y_i^* z_i^*} \\ \sigma_{y_i^* z_i^*} & 1 \end{bmatrix}$$

Clearly, whenever $\sigma_{y_i^* z_i^*} \neq 0$, point estimates of equation (2) are biased and inconsistent. This point can be immediately retrieved by considering the conditional mean function of equation (2):

$$\begin{aligned} E(y_i^* | \mathbf{x}_i, z_i^* = r) &= \mathbf{w}'_i \beta + E(\varepsilon_i | z_i = r) \\ &= \mathbf{w}'_i \beta + \sigma_{y_i^* z_i^*} \frac{\phi[\rho_q - \mathbf{k}'_i \gamma] - \phi[\rho_{q+1} - \mathbf{k}'_i \gamma]}{\Phi[\rho_{q+1} - \mathbf{k}'_i \gamma] - \Phi[\rho_q - \mathbf{k}'_i \gamma]} \\ &\equiv \mathbf{w}'_i \beta + \sigma_{y_i^* z_i^*} \xi \end{aligned}$$

where Φ is the cumulative density function, ϕ is the probability density function. The term $\sigma_{y_i^* z_i^*} \xi$ in the last row is clearly different from zero and it produces a bias in the point estimates due to the endogeneity of covariate z_i^* in the set of regressors \mathbf{w}_i . The presence of the above term underlines the fact that z_i^* has both a direct effect on the outcome of the dependent variable of equation (2) and also an indirect effect through the correlation with the error term. This leads to point estimates which may be either higher or lower than the correct ones. Hence, the empirical strategy invokes for a specific estimation procedure to soak up the source of bias and render consistent point estimates.

Different procedures have been used in the literature to address the above issue. For instance, Butler *et al.* (1998) suggest a two-step procedure in order to obtain consistent estimates for the set of parameters β . More specifically, their empirical strategy consists of estimating equation (3) by applying an ordered probit estimator and, successively, of using the estimates coefficients $\hat{\gamma}_i$ and the cutpoints in order to correct the estimation of the set of parameters β in the equation (2). Li and Tobias (2006) offer a different estimation procedure using a simulation-based Bayesian algorithm to replicate the results obtained in Butler *et al.* (1998).

Our empirical analysis employs the approach developed in Sajaia (2008), which proposes the estimation of a bivariate ordered probit (BOP) to overcome the endogeneity issue. For the sake of clarity, we rewrite our structural model in the following form in order to expunge from the set of regressors in equation (2) the endogenous covariate:

$$y_i^* = \mathbf{x}'_{1i}\beta + \delta z_i^* + \varepsilon_i \quad (4)$$

$$z_i^* = \mathbf{x}'_{2i}\gamma + \eta_i \quad (5)$$

where $\mathbf{x}_{2i} \equiv \mathbf{k}_i$.

A necessary assumption in order to carry out our estimation is the exogeneity condition between the regressors and the error term. This implies that the covariances between the regressors and the error terms should be zero, i.e. $E(\mathbf{x}_{1i}\varepsilon_i) = E(\mathbf{x}_{2i}\eta_i) = 0$. In a standard fashion for latent variables models, we observe two categorical variables, y_i^* and z_i^* , comprising respectively J and R alternatives:

$$y_i = \begin{cases} 1 & \text{if } y_{1i}^* \leq \mu_1 \\ 2 & \text{if } \mu_1 \leq y_i^* \leq \mu_2 \\ & \cdot \\ & \cdot \\ J & \text{if } \mu_{J-1} < y_i^* \end{cases} \quad z_i = \begin{cases} 1 & \text{if } z_i^* \leq \rho_1 \\ 2 & \text{if } \rho_1 \leq z_i^* \leq \rho_2 \\ & \cdot \\ & \cdot \\ R & \text{if } \rho_{R-1} < z_i^* \end{cases} \quad (6)$$

where $\mu_1 \dots \mu_{J-1}$ and $\rho_1 \dots \rho_{R-1}$ are the unknown cutpoints. From the above specification, it follows that the probability that $y_i^* = j$ and $z_i^* = r$ is:

$$\begin{aligned}
\Pr(y_i = j, z_i = r) &= \Pr(\mu_{J-1} < y_i^* \leq \mu_J, \rho_{R-1} < z_i^* \leq \rho_R) \\
&= \Pr(y_i^* \leq \mu_J, z_i^* \leq \rho_R) \\
&\quad - \Pr(y_i^* < \mu_{J-1}, r_i^* < \rho_R) \\
&\quad - \Pr(y_i^* < \mu_J, z_i^* < \rho_{R-1}) \\
&\quad + \Pr(y_i^* \leq \mu_{J-1}, z_i^* < \rho_{R-1})
\end{aligned}$$

Assuming that the error terms are distributed as a bivariate standard normal and have a correlation index given by ξ , the individual contribution to the likelihood function can be expressed as follows:

$$\begin{aligned}
\Pr(y_i = j, z_i = r) &= \Phi\left(\mu_J - \mathbf{x}'_{1i}\beta(\rho_R - \delta\mathbf{x}'_{1i}\beta - \mathbf{x}'_{2i}\gamma)\zeta, \tilde{\xi}\right) - \\
&\quad \Phi\left(\mu_{J-1} - \mathbf{x}'_{1i}\beta(\rho_R - \delta\mathbf{x}'_{1i}\beta - \mathbf{x}'_{2i}\gamma)\zeta, \tilde{\xi}\right) - \\
&\quad \Phi\left(\mu_J - \mathbf{x}'_{1i}\beta(\rho_{R-1} - \delta\mathbf{x}'_{1i}\beta - \mathbf{x}'_{2i}\gamma)\zeta, \tilde{\xi}\right) + \\
&\quad \Phi\left(\mu_{J-1} - \mathbf{x}'_{1i}\beta(\rho_{R-1} - \delta\mathbf{x}'_{1i}\beta - \mathbf{x}'_{2i}\gamma)\zeta, \tilde{\xi}\right)
\end{aligned} \tag{7}$$

where Φ is the bivariate standard normal cumulative distribution, $\zeta = \frac{1}{\sqrt{1+2\delta\xi+\delta^2}}$ and $\tilde{\xi} = \zeta(\delta + \xi)$.

The model is estimated via a full-information matrix likelihood (FIML). The log-likelihood of observation i is:

$$\ln L_i = \sum_{j=1}^J \sum_{r=1}^R I(y_i = j, z_i = r) \ln \Pr(y_i = j, z_i = r) \tag{8}$$

Under the assumption of independence, we may sum equation (6) across all observations to obtain the log likelihood for the entire sample, i.e.:

$$\ln L = \sum_{n=1}^N \sum_{j=1}^J \sum_{r=1}^R I(y_i = j, z_i = r) \ln \Pr(y_i = j, z_i = r) \tag{9}$$

3.2 The Identification strategy

In order to obtain a fully identified model we need a different composition of the sets of the exogenous regressors in equations (4) and (5), i.e. $\mathbf{x}_{1i} \neq \mathbf{x}_{2i}$. Indeed, if $\mathbf{x}_{1i} = \mathbf{x}_{2i}$, after substituting equation (5) into (4), we obtain:

$$\begin{aligned} y_i^* &= \mathbf{x}'_{1i}\beta + \delta \left[\mathbf{x}'_{1i}\gamma + \eta_i \right] + \varepsilon_i \\ &= \mathbf{x}'_{1i}\varphi + \nu \end{aligned} \tag{10}$$

where $\varphi = [\beta + \delta\gamma]$ and $\nu = \varepsilon_i + \delta\eta_i$. The model is clearly unidentified since if we estimate the reduced form in equation (10), we are not able to retrieve the estimates for the vectors of parameters β and γ .

The problem arises from the fact that we want to isolate both the direct and the indirect effect in the structural model. More specifically, the variable z_i^* impacts directly on the dependent variable y_i^* through the parameter δ . Further, the set of regressors impinges on y_i^* both directly through the vectors of parameters β and indirectly through the vector of parameters γ .

Clearly, in order to obtain a fully identified model, we need to impose some restrictions on the sets of exogenous variables such that $\mathbf{x}_{1i} \neq \mathbf{x}_{2i}$. Although there is no general guidance on how to proceed, the choice of restrictions needs to be imposed *a priori*. To this aim, we rely on economic reasoning to justify the existence of some restrictions on the sets of regressors (Fertig and Schmidt, 2002; Brenner and Fertig, 2006).

Recall that our main objective is to evaluate the effects of the individual's fairness concerns on his preferences for redistribution. Contrary to the existing literature, in this paper we argue that fairness should be treated endogenously as determined by the extent of freedom of choice and control individuals enjoy. In formulating the theoretical hypotheses 1 and 2, we pointed out that the individuals' extent of freedom of choice and control exercises a direct as well as an indirect effect on his preferences for redistribution. Therefore, both the sets of regressors \mathbf{x}_{1i} and \mathbf{x}_{2i} contain freedom

of choice and control and, in order to control for individual heterogeneity, they also include the same demographic variables. However, since we are interested in explaining individuals' preferences for redistribution, to complete the set of regressors \mathbf{x}_{1i} we take into consideration the suggestions drawn from the relevant related literature (Alesina and Giuliano, 2010). Such a literature (*prior* information) guides us to determine the set of variables to be used in \mathbf{x}_{1i} . This allows us to differentiate \mathbf{x}_{1i} from \mathbf{x}_{2i} in our structural equations and fully identify our model.

3.3 The estimated equations

We use the methodology described so far to carry out our empirical analysis. However, before turning into the description of the data and into the implementation of the regression analysis, we present the equations to be estimated in the next section on the basis of the theoretical hypotheses in Section 2.

In Section 2 we argued that an individual's preferences for redistribution are determined by the extent of free choice and control in decision-making he enjoys. We also argued that an individual's level of free choice and control in decision-making affects his tastes for income transfers directly as well as indirectly through the opinions the individual holds about the existing level of fairness in the process of social mobility. Recalling the two testable theoretical hypotheses suggested in Section 2, the direct effect of the individual's freedom of choice and control on his preferences for redistribution is described in hypothesis 1 (H1), whereas the indirect effect in hypothesis 2 (H2).

In the empirical methodology described above hypotheses H1 and H2 are formally defined in the system of the two equations (5) - the direct effect - and (4) - the indirect effect - which we can now re-write as follows:

$$Fair_{ict} = f(SF_{ict}, Controls_{ict}) \quad (11)$$

$$IPR_{ict} = f\left(SF_{ict}, \widehat{Fair}_{ict}, Controls_{ict}, Beliefs_{ict}\right) \quad (12)$$

For the sake of clarity, from now onwards let us indicate with the term *subjective freedom* the extent of free choice and control in decision making an individual enjoys. In equation (11) we estimate the opinions of the individual i in country c in time t about the extent of fairness in the process of social mobility ($Fair$) as determined by the level of subjective freedom he enjoys (SF), by some controls that describe his socio-demographic characteristics ($Controls$). In equation (12) we estimate the same individual's preferences for redistribution (IPR) as determined by endogenous fairness in social mobility (\widehat{Fair}), by his level of subjective freedom (SF), by some controls that describe his socio-demographic characteristics ($Controls$) and by individual beliefs, pointing out individual's view about religious and economic and social issues ($Beliefs$).

Let us now move on by describing the variables used in the empirical investigation where the system of the two equations (11) and (12) will be estimated.

3.4 The data

We use data drawn from the World Values Survey (WVS). This dataset is made of different waves of interviews encompassing population samples in countries containing almost 90% of the world's population. The surveys cover a wide range of issues, including political orientations, religious beliefs, economic and social attitudes and demographic characteristics of respondents.

In this paper our objective is to explain the determinants of an individual's preferences for redistribution (IPR). To measure the individual's tastes for income transfers we use the following WVS question (*e035 - income equality*):

How would you place your views on this scale? 1 means that you agree completely with the statement that "we need large income differences as incentives"; 10 means that you completely agree with the statement that "incomes should be made more equal"; if your views fall somewhere in between, you can choose any number in between.

Respondents are facing a ten-point scale in which the two extremes, 1 and 10,

are those defined in the question above. From the construction of the question, each individual's taste for income transfers is ordered in a descending fashion: high values indicate high preferences for transfers and *vice versa*. If an individual completely agrees with the statement that the distribution of the income should be made more equal, he is also more likely to support larger government's redistribution policies. The opposite applies if he believes that the society needs larger income differences.

A more careful look at the question of the WVS may lead someone to argue that, while the statement *income should be made more equal* clearly reflects a dislike for redistribution, the expression *we need larger income differences as incentives* might not always lead to the individual's support for lower transfers. This observation, if were deemed as legitimate, would clearly compromise the validity of the question to measure the individual's preferences for redistribution. However, it is clear that the two statements above do not have to be considered in isolation, but rather as different components of the same question designed to pinpoint divergent tastes of the respondents on the same issue. Since the denomination of the WVS question indicates that the issue at stake is *income inequality*, it is apparent that the two contrasting views whose survey's respondents are asked to pay attention to are *more equal incomes* and *larger income differences*. We believe that these two opposing preferences for the distribution of income reasonably lead to two opposing tastes for income redistribution. Therefore, we argue for the use of the WVS question *E035 - Income inequality*, as an appropriate variable to measure the individual tastes for income transfer in our empirical analysis.

It is important to note that several studies examining the determinants of individuals' attitudes toward inequality, in either single country or in a cross-section of countries, have used similar survey measures for assessing the determinants of individuals' tastes for income redistribution (see for example Ravallion and Loskin, 2000; Fong, 2001; Corneo and Grüner, 2002; Ohtake and Tomioka, 2004).

As discussed in Section 2 and described in the system of the equations (11) and (12), in this paper we argue that an individual preferences for redistribution are determined by the degree of subjective freedom he enjoys both directly and indirectly through his

opinions about the extent of fairness in social mobility. The degree of the individual's subjective freedom (SF) is proxied by the level of freedom of choice and control he perceives to hold over his life. We construct the measure of the individual's level of subjective freedom by considering the respondents' answers to the following question in the WVS database (*a173 - Freedom of choice and control*):

Some people feel they have completely free choice and control over their lives, while other people feel that what they do has no real effect on what happens to them. Please use this scale where 1 means "none at all" and 10 means "a great deal" to indicate how much freedom of choice and control you feel you have over the way your life turns out.

The variable is coded in ascending order with high values indicating a high degree of subjective freedom enjoyed by an individual and *vice versa*.

A person's preferences for redistribution are also affected by his opinion about the extent of fairness in social mobility. Our main claim in this paper is that such an opinion is endogenously determined by the level of the individual's subjective freedom. We proxy the extent of fairness in the process of income mobility perceived by an individual by his beliefs about the reasons for why people are in need. We use the following WVS question (*e131 - Why are people in need*) to this purpose:

Why, in your opinion, are there people in this country who live in need?
Here are two opinions: Which comes closest to your view? "Poor because of laziness and lack of will power" or "Poor because of an unfair society"

According to the answers given by respondents to the above question, we construct a dummy variables (*Laziness*) which takes the value of 1 if the individual believes that people are in need because of laziness and lack of will power, and 0 otherwise. The more an individual perceives that people are in need because they are lazy or lack of will power, the more likely he opposes redistribution. On the contrary, the more a

person believes that people are in need because of the working of an unfair society, the more likely he supports income transfers.

In estimating equations (11) and (12) we also use a set of control variables. First of all, we address the issue of heterogeneity in the data by including a set of country and time dummies to capture cross-country and temporal differences. Secondly, we employ some socio-demographic controls. Finally, to model individuals preferences for redistribution, in equation (12) we include some variables capturing the individuals' opinions about religion, politics and society (see identification strategy in Subsection 3.2).

As far as the socioeconomic variables are concerned, we first consider the level of self-reported income. Respondents were asked to express the level of their income on a ten-point scale with low and high values indicating low and high levels of income, respectively. A binary dummy variable is used to indicate the gender of respondents which takes the value 0 if they are female and 1 if male. Age is expressed in years. The individual's education is computed by using two binary dummy variables to indicate whether he achieved either a high or a low level of education. The marital status of the respondents is captured by a variable ordered on a six point scale in which the value 1 indicates that the respondent is married and the value 6 that he is single. Whether the respondents live in small towns or in big cities is captured by a variable that measure the size of the place of their residence.

The variables defining people's attitudes towards religion and society are the following. The individual's perception of whether to trust others is measured by a binary dummy variable whose value is 1 if he believes that people should be trusted and 2 otherwise. The respondent's opinion about whether competition is good or harmful is measured by a variable coded on a ten point scale in a descending order with low values indicating pro-market attitudes and *vice versa*. The political orientation of respondents is captured by a ten point scale variable with low values referring to left oriented political preferences and high values indicating right oriented political preferences. The individual's religiosity is indicated by his assessment of how often he attends religious

services. The variable is coded in descending order over a eight point scale with the two extreme values, 1 and 8, indicating frequent and no attendance, respectively.

In table 1 we report the list of countries under investigation as well as the variable definitions and their sources. Summary statistics are shown in Table 2a and the correlation matrix in Table 2b.

Table 1 (list of countries, data description and sources) about here

Table 2a (summary statistics) about here

Table 2b (correlation matrix) about here

4 Estimation and results

In Table 3 we show our baseline results. In columns (1) and (2) the extent of fairness in social mobility perceived by the individuals is considered exogenous. In line with the existing literature on the determinants of income transfers, a person's opinion about how fair is the process of income mobility affects significantly his preferences for redistribution. More specifically, those who believe that people are in need because the society they live in is unfair are more likely to think that incomes should be made more equal and, therefore, support redistribution. On the contrary, those who believe that people are in need because they are lazy and lack will power, think that larger income differences are required in society and, therefore, they do not support redistribution. This result appears to be robust to the inclusion of controls and individual beliefs (see column (2)). In this regard, we note that the age, sex and marital status of respondents do not impact on their preferences for redistribution. Instead, the probability of supporting income transfers declines for those people living in big cities, earning higher incomes and displaying high levels of education. The political

orientation of respondents plays a significant role in shaping their tastes for transfers: those left-wing politically oriented are more likely to support redistribution as compared to those who are right-wing oriented. Individuals who believe that competition is good and stimulates people to work hard and develop new ideas are more likely to reject income transfers. The opposite applies to those who think that competition is harmful and brings the worst of people. Individuals who believe that most people can be trusted are more in favour of income transfers as opposed to those who do not trust others. This result can be understood in the light of the literature on the relationship between fractionalization in society (be it ethnic, religious and/or linguistic) and people's preferences for redistribution (Alesina and La Ferrara, 2005). Finally, the level of an individual's religiosity, proxied by his attendance to religious services, does not seem to affect his tastes for redistribution. This results runs against the literature on the relationship between religiosity and preferences for redistribution (Guiso, Sapienza and Zingales, 2003) and strenghtens the result obtained in the experimental literature (Tan, 2006).

Table 3 (baseline model) about here

In columns (3) to (6), we report regression results by using the BOP estimator. Here fairness in social mobility is considered endogenous as determined by the level of individuals' subjective freedom. This implies a two-stage estimation procedure where fairness in social mobility is the dependent variable in the first stage and the individual's preferences for redistribution in the second stage (see equation (11) and (12) in Section 3). It is important to note from the outset that the Wald test rejects the null hypothesis of independent equations and supports the use of the BOP estimator. This implies that the estimated equations in the two stages are correlated and, therefore, the extent of fairness in social mobility perceived by individuals is endogenous.

In columns (3) and (4) the estimation is carried out without controls and individual beliefs, which are instead included in columns (5) and (6). Results appear to be very similar regardless the inclusion of controls. Thus, we comment on the results obtained

with the fully developed BOP regression only (columns (5) and (6)). In the first stage, the higher the extent of subjective freedom enjoyed by an individual the greater his perception of fairness in social mobility. In the second stage, both the direct effect of an individual's subjective freedom as well as its indirect effect through the extent of fairness in social mobility play a significant role in shaping his preferences for redistribution. The higher the individual's level of free choice and control over his life, the fairer he perceives the process determining the wealth and poverty in society, the less he supports redistribution. Therefore, our findings in Table 3 support H1 and H2.

It is interesting to compare the results in column (2) to those in column (6). Two findings deserve to be highlighted. First, the direct effect of an individual's level of subjective freedom on his preferences for redistribution declines by about 20%. Second, the impact of exogenous fairness is more than three times smaller than that exercised by fairness endogenously determined by an individual's subjective freedom.

Let us now move on to the analysis of the effect of the control variables and individual beliefs on the individual's preferences for redistribution. We note that age, sex, marital status and size of town do not impact on the individual's preferences for redistribution. The probability of supporting income transfers declines as self-reported income and education rise. The fact that more educated individuals are more averse to redistribution might capture the effect provided by the prospects for upward mobility: holding income constant, people invest more in education to be upwardly mobile (Benabou and Ok, 2001). Moreover, left-wing (right-wing) politically oriented individuals are more (less) likely to support redistribution, even after controlling for income. This result clearly shows that the ideological dimension matters in shaping the individuals' preferences for redistribution. It also reproduces a finding pointed out by the experimental evidence that indicates how right-wing individuals are more likely to redistribute less, reducing efficiency losses caused by redistribution (Alesina *et al.*, 2003 and Fehr *et al.*, 2006). Pro-market individuals dislike income transfers. Those who believe that most people can be trusted are more likely to display higher preferences for redistribution. The individual's degree of religiosity does not seem to affect his

tastes for redistribution. This result is in line with the literature pointing out that religious affiliation and participation in religious services yields no significant influence on social preferences in an experimental setting (Tan, 2006).

In Table 4 we reproduce the estimation in Table 3 by splitting the sample of respondents into two sub-samples according to their political orientation. Likewise in Table 3, in the first two columns we report estimation results with exogenous fairness in social mobility, whereas in the remaining four columns we endogenize it by using the BOP procedure. The estimations are carried out for both left- and right-leaning individuals. Similarly to the baseline model in Table 3, the Wald test rejects the null hypothesis of independent equations and supports the use of the BOP estimator. Regardless the individuals' political orientation, therefore, fairness should be treated endogenously as determined by the extent of subjective freedom enjoyed by individuals.

In the first stage we note that for both left- and right-wing individuals fairness in social mobility is significantly affected by the level of subjective freedom. The lower their subjective freedom, the more likely individuals believe that people are in need because of an unfair society. Our results, in the second stage indicate that the level of subjective freedom enjoyed by individuals affects their taste for redistribution directly as well as indirectly *via* the individuals' opinions about fairness in social mobility. Again, this result is confirmed regardless the individuals' political orientation. The higher the subjective freedom, the less likely an individual supports redistribution. Finally, we note that the magnitude of endogenous fairness on the individuals' preferences for redistribution appears to be larger than that provided by the exogenous one. The results in Table 4, therefore, support the theoretical hypotheses H1 and H2 one more time for both the sub-sample of left-leaning and right-leaning individuals.

Table 4 (political partition) about here

Let us now comment on the results concerning with the impact of the control variables on the individual's preferences for redistribution. No matter his own political orientation, the individual's taste for income transfers is by and large affected by the

same socio-demographic characteristics as well as the same opinions about the working of the economy and society. Those respondents who do not favour redistribution are rich, well-educated, free market supporters and do not believe that other people should be trusted in society. Female, married and living in big cities are more likely to support redistribution for right-leaning individuals only. It is important to note that this result differs with the experimental literature (Crozon and Gneezy, 2004) which points out that the pro-redistributive attitudes of women seem to work for those left-wing politically oriented only.

In Tables 5 we partition the sample of individuals under investigation in two different age-groups: those whose age is between 15 and 30 years and those older than 54 years of age. Again in the first two columns of the tables the effect of fairness in social mobility on the individual's preferences for redistribution is considered exogenous, whereas in the remaining four columns the estimation is carried out into two stages according to the BOP procedure to endogenize fairness. The Wald test supports the adoption of the BOP estimator. Moreover, the level of subjective freedom enjoyed by individuals affect their preferences for redistribution directly as well as indirectly through their opinions about the extent of fairness in social mobility. This results are consistent across the estimations, no matter the age of respondents. Therefore, H1 and H2 are once more supported by the data.

Tables 5 (age partition) about here

As far as the effect of the control variables on individuals' tastes for income transfers is concerned, we observe that, regardless the age of respondents, those individuals who are rich, well-educated, pro-market, right-leaning and less inclined to trust other people are more likely to dislike redistribution.

To complete our empirical analysis, in Table 6 we divide the sample of respondents into three sub-groups on the basis of whether they live in OECD, transition or developing countries. Again, the Wald test support the use of the BOP estimation. Regardless the country of residence, the level of the individual's subjective freedom affects both di-

rectly and indirectly his tastes for income transfers. The higher the extent of subjective freedom, the less the individual likes redistribution. The greater the individual's belief that he lives in a fair society where people get what they deserve, the less he favours redistribution. However, the results in Table 6 indicates one more time that, no matter the set of countries where he lives, the individual's sense of fairness in social mobility which impacts on his tastes for redistribution is endogenously determined by the extent the individual's subjective freedom. Therefore, H1 and H2 are again supported by the data.

Tables 6 (geographic partition)

The impact of the control variables on people's preferences for redistribution do not seem to differ across estimations in Table 6. We note that male in OECD countries and single and religious persons in transition economies are more likely to dislike redistribution. Free market supporters oppose redistribution in OECD and transition countries only. Moreover, regardless the country where people live in, respondents who are rich, well-educated, right-wing politically oriented and those who do not believe that other people should be trusted are less likely to support income transfers.

4.1 Robustness checks

In order to corroborate the results obtained in the empirical analysis developed in the previous section, we now carry out a robustness checks by using different variables to *proxy* the individual's preferences for redistribution (*IPR* in equation (11)) and the individual's opinion about the extent of fairness in social mobility (*Fair* in equations (11) and (12)), respectively. The definition of these two variables and their sources are reported in Table 1. The summary statistics and correlation matrix are shown in Tables 2a and 2b.

The new variable to proxy the individual's taste for income transfers is constructed on the basis of respondents' answers to the following WVS question (*e037 - Government*

responsibility):

How would you place your views on this scale? 1 means you agree completely with the statement: people should take more responsibility to provide for themselves. 10 means you agree completely with the statement: the government should take more responsibility to ensure that everyone is provided for. If your views fall somewhere in between, you can choose any number in between.

Individuals believing that people should take more responsibility to provide for themselves are more likely to dislike redistribution if compared to those who believe that the government should ensure that everyone is provided for. Therefore, we measure the individual's preferences for redistribution on a ten point scale in ascending order with high values indicating greater support for redistribution and *vice versa*.

To proxy the individual's opinions about the extent of fairness in the process of income mobility in society we use the respondents' answers to the following WVS question (*e132 - Chance to escape from poverty*):

In your opinion, do most poor people in this country have a chance of escaping from poverty, or is there very little of chance escaping?

The variable is a binary dummy which takes the value 0 if the respondent believes that poor people have little chance to escape out of poverty and the value 1 if he believes that they do have a chance. If the individual perceives that people have chances to work their way out of poverty, it is reasonable to hypothesize that he also thinks of living in a fair and mobile community where the today poor can be rich tomorrow and *vice versa*. The opposite applies if he believes that the poor have little chances of escaping poverty.

In Table 7 we report our regression results. As already obtained in our baseline model in Table 3, exogenous fairness in social mobility as well as the level of subjective freedom an individual enjoys affects his preferences for redistribution (see column (1)).

However, the Wald test again rejects the null hypothesis of independent equations and supports the use of the BOP estimator. This implies that the estimated equations in the two stages are correlated (see columns (2) and (3)) and, therefore, the extent of fairness in social mobility perceived by individuals is endogenous.

Although we have used different variables to proxy the individual's preferences for redistribution as well as his opinions about the working of social mobility, our empirical findings in Table 7 show that both the direct and the indirect effect of subjective freedom significantly determine people's tastes for income transfers. More specifically, estimates in column (3) indicate that the higher the individual's extent of freedom of choice and control over his life, the more he believes that people should take more responsibility to provide for themselves (i.e., the direct effect). They also indicate in column (2) that the higher the individual's level of free choice and control over his life, the more he believes that the poor can escape out of poverty. This implies that the individual perceives as fairer the process determining the wealth and poverty in society and the less he supports redistribution (i.e., the indirect effect). The results obtained in Table 7 represent a further confirmation of the validity of our theoretical hypotheses H1 and H2.

Table 7 (robustness check) about here

Regarding the effect of the control variables, all of them, with the only exception of the religious attitudes of respondents, have a significant effect on the individuals' tastes for income transfers. Those individuals who are young, male, single, live in small cities, rich and well-educated are less likely to think that government should take more responsibility to ensure that everyone is provided for. Moreover, the probability for an individual to favour income transfers increases if he dislikes competition, is left-wing politically oriented and does not trust others in society.

5 Concluding Remarks

The empirical literature on the determinants of the individual's preferences for redistribution highlights the importance of fairness concerns about the causes of income differences. In this perspective, the distribution of income is considered fair if it is perceived as the outcome of a process of social mobility where the poor today have their chances to escape out of poverty in the future. Therefore, in this view, the degree of income mobility and/or the moral worthiness of the recipients of the transfer scheme drive people's tastes for redistribution. The concept of fairness proposed in this line of research is clearly input-based since people's attitudes toward inequality are shaped by their opinions about the role individuals play in the income generation process.

In this paper we examined why different people have different opinions about the extent of fairness in the process of social mobility which generates existing distributions of income. We argued that the level of subjective freedom enjoyed by an individual shapes his perceptions about how fair is the process that brings about income differences in society which, in turn, affects his tastes for redistribution. More specifically, we suggested two theoretical hypotheses to be empirically validated. In the first hypothesis we claim that the higher the individual's level of freedom of choice and control over his life, the less his support for redistribution. In the second hypothesis we point out that the higher the individual's level of free choice and control over his life, the fairer he perceives the process determining the wealth and poverty in society, the less he supports redistribution. We tested these two hypotheses by using individual level data drawn from the World Value Survey database. We employed a binomial ordered probit (BOP) procedure to carry out the estimations.

The findings of our empirical analysis strongly support our theoretical claims. Therefore, our results indicate that the impact of people's concerns about fairness on their preferences for redistribution ought to be considered endogenously. This fact represents an important development in the empirical literature on the determinants of people's attitudes toward income transfers since the perceived level of fairness

in the income dynamics in such a literature has been always treated exogenously.

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Table 1
Description of Variables

Variable	Definition	Source
Income Equality	Variable proxing individual s preferences for redistribution.	World Values Survey
Government Responsibility	Variable proxing individual s preferences for redistribution.	World Values Survey
Freedom of Choice and Control	Variable indicating how much freedom and control individuals believe to have and ranging from 1 (low freedom and control) and 10 (high freedom and control)	World Values Survey
Gender	Dummy variable taking the value of 0 if the respondant is female and 1 if he is male	World Values Survey
Age	Variable indicating how old is the respondant	World Values Survey
Marital Status	Ordered variable indicating the marital status of an individual and ranging from 1 (married) to 7 (single)	World Values Survey
Size of Town	Variable indicating the dimension of the town where the respondant lives and ranging from 1 (low dimension) to 8 (high dimension)	World Values Survey
Self-Reported Income	Variable referring to the self-reported income ranging from 1 (low decile) to 10 (high decile)	World Values Survey
Competition is good	10-point scale variable indicating whether the individual believes that competition is good or harmful. The lower the value, the higher the respondant believes that competition is good	World Values Survey
Laziness	Dummy variable proxing individual s perception of fairness. It takes the value of 0 if the individual believes that people are in need because the society is unfair and 1 if he believes that people are in need because of laziness and lack of will power	World Values Survey
Social Mobility	Dummy variable proxing individual s perception of fairness. It takes the value of 0 if the individual believes that there is no chance to escape from poverty and 1 if he believes that people do have that chance	World Values Survey
Trust	Dummy variable taking the value of 1 if the individual believes that most people can be trusted and 2 otherwise	World Values Survey
Low Education	Dummy variable taking the value of 1 if the individual achieved a low level education and 0 otherwise	World Values Survey
High Education	Dummy variable taking the value of 1 if the individual achieved a high level education and 0 otherwise	World Values Survey
Religiosity	7-point scale variable indicating how often an individual attends religious services. Low values indicate a frequent attendance to religious services	World Values Survey

List of countries used in the estimation: Albania, Argentina, Armenia, Australia, Azerbaijan, Bangladesh, Belarus, Bosnia, Brazil, Bulgaria, Chile, China, Croatia, Czech Republic, Dominican Republic, Estonia, Finland, Georgia, Germany, Hungary, India, Japan, Latvia, Lithuania, Macedonia, Mexico, Moldova, New Zealand, Nigeria, Norway, Peru, Philippines, Puerto Rico, Romania, Russia, Serbia, Slovakia, Slovenia, South Africa, Spain, Sweden, Taiwan, Turkey, Ukraine, United States, Uruguay, Venezuela

Table 2a
Summary Statistics

	Variable	Observation	Mean	S.D.	Min	Max
1	Income Equality	51586	5.762784	2.988395	1	10
2	Government Responsability	51216	6.415769	3.00537	1	10
3	Autonomy Freedom	51586	6.487361	2.562334	1	10
4	Laziness	51586	0.3020199	0.4591383	0	1
5	Social Mobilty	51586	0.4032877	0.4905623	0	1
6	Age	51496	40.73944	15.78876	15	94
7	Gender	51528	0.4893844	0.4998921	0	1
8	Marital Status	51508	2.543993	2.132055	1	6
9	Size of Town	36124	4.981287	2.534753	1	8
10	Self-Reported Income	44781	4.420759	2.546057	1	10
11	Low Education	49792	0.306736	0.4611435	0	1
12	High Education	49792	0.2292336	0.420344	0	1
13	Political Orientation	50784	3.46812	2.488816	1	10
14	Competition is good	42063	5.585027	2.301373	1	10
15	Trust	49961	1.747843	0.4342551	1	2
16	Religiosity	49754	4.675282	2.484555	1	8

Table 2b
Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1															
2	-0.1709***	1														
3	0.0816***	-0.1386***	1													
4	0.0694***	-0.1880***	0.1407***	1												
5	0.0377***	-0.1585***	0.1440***	0.4057***	1											
6	-0.0570***	0.0525***	-0.0678***	-0.0189***	-0.0529*	1										
7	0.0181***	-0.0303***	0.0435***	0.0370***	0.0532***	0.0039	1									
8	0.0045	0.0026	0.0405***	-0.0062	0.0053	-0.2986***	-0.0298***	1								
9	0.0724***	-0.0573***	0.0892***	0.0258***	0.0230***	-0.0435***	-0.0313***	0.0882***	1							
10	0.0924***	-0.1036***	0.1114***	0.0861***	0.0641***	-0.1027***	0.0555***	-0.0844***	0.1633***	1						
11	-0.1488***	0.0440***	-0.0551***	0.0035	-0.0039	0.2675***	-0.0202***	-0.0724***	-0.1649***	-0.2324***	1					
12	0.1078***	-0.0792***	0.0923***	0.0315***	0.0442***	-0.0833***	0.0239***	0.0453***	0.1982***	0.2672***	-0.3628***	1				
13	-0.0883***	-0.0205***	-0.0596***	-0.0546***	-0.0583***	0.0290***	-0.0620***	0.0164***	-0.0071	-0.0705***	0.0703***	-0.0559***	1			
14	0.1255***	-0.1013***	0.0782***	0.1357***	0.1188***	-0.0118	0.0136***	0.0049	0.0022	0.0079	0.0152***	-0.0036	-0.0487***	1		
15	0.0412***	0.0417***	-0.0395***	-0.0156***	-0.0687***	-0.0266***	-0.0047	0.0188***	0.0107	-0.0943***	0.0316***	-0.0692***	-0.0065	0.0256***	1	
16	-0.008	0.0210***	-0.0378***	-0.0607***	-0.0879***	0.0199***	0.0813***	-0.0001	0.0524***	0.1007***	-0.0603*	0.0123***	0.0356***	-0.1474*	-0.0535***	1

Notes: The numbers indicating the variables are the same reported in Table 2a

*** Significant at 1% level

Table 3
Freedom of Choice and Control and Preferences for Redistribution: Baseline Model

	Ordered Probit		Bivariate Ordered Probit			
	Exogenous Fairness		Endogenous Fairness			
	(1)	(2)	First Stage	Second Stage	First Stage	Second Stage
Subjective Freedom	0.048*** (0.002)	0.044*** (0.004)	0.049*** (0.003)	0.041*** (0.003)	0.040*** (0.004)	0.032*** (0.004)
Fairness - Lazy	0.199*** (0.012)	0.165*** (0.018)		0.406*** (0.109)		0.476*** (0.106)
Age		-0.001 (0.001)			0.000 (0.001)	-0.001 (0.000)
Gender		0.021 (0.015)			0.069*** (0.018)	0.021 (0.014)
Marital Status		-0.002 (0.004)			-0.003 (0.005)	-0.000 (0.003)
Size of Town		0.006* (0.003)			-0.007* (0.004)	0.003 (0.003)
Self-Reported Income		0.027*** (0.003)			0.048*** (0.004)	0.027*** (0.004)
Low Education		-0.144*** (0.020)			0.027 (0.024)	-0.157*** (0.018)
High Education		0.118*** (0.019)			-0.057** (0.024)	0.127*** (0.017)
Competition is good		-0.031*** (0.004)				-0.031*** (0.003)
Political Orientation		0.049*** (0.004)				0.046*** (0.004)
Trust		0.104*** (0.017)				0.094*** (0.015)
Religiosity		0.006 (0.004)				0.003 (0.003)
Log-Likelihood	-113,313.39	-50,805.49		-141,568.24		-63,568.50
Number of observations	51,586	23,247		51,586		23,247
Overall Significance Test	4695.25***	2599.3***		4800.85***		2955.93***
Wald Test				3.51*		7.83***
Adjusted R2	0.024	0.032				

Notes: Regression results controlled for countries and time dummies. Sample weights applied. Robust standard errors are shown in parentheses. The independence of equations hypothesis is tested by the Wald test. The H_0 assumes that equations are independent.

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 4
Freedom of Choice and Control and Preferences for Redistribution: Political Partition

	Ordered Probit		Bivariate Ordered Probit			
	Exogenous Fairness		Endogenous Fairness			
	Left	Right	First Stage	Second Stage	First Stage	Second Stage
			Left	Right	Left	Right
(1)	(2)	(3)	(4)	(5)	(6)	
Subjective Freedom	0.045*** (0.005)	0.044*** (0.005)	0.043*** (0.006)	0.034*** (0.005)	0.038*** (0.005)	0.032*** (0.005)
Fairness - Lazy	0.167*** (0.024)	0.181*** (0.022)		0.425*** (0.151)		0.532*** (0.178)
Age	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)
Gender	0.002 (0.020)	0.036* (0.020)	0.065*** (0.025)	-0.001 (0.019)	0.062*** (0.023)	0.036* (0.018)
Marital Status	0.005 (0.005)	-0.011** (0.005)	-0.001 (0.006)	0.006 (0.005)	-0.004 (0.006)	-0.008* (0.004)
Size of Town	-0.001 (0.004)	0.017*** (0.004)	-0.016*** (0.006)	-0.003 (0.004)	-0.001 (0.005)	0.013*** (0.004)
Self-Reported Income	0.026*** (0.005)	0.030*** (0.004)	0.045*** (0.006)	0.028*** (0.005)	0.047*** (0.005)	0.028*** (0.005)
Low Education	-0.182*** (0.027)	-0.119*** (0.025)	0.067** (0.033)	-0.189*** (0.025)	-0.026 (0.029)	-0.125*** (0.023)
High Education	0.116*** (0.025)	0.115*** (0.026)	-0.096*** (0.033)	0.126*** (0.022)	0.005 (0.031)	0.131*** (0.023)
Competition is good	-0.043*** (0.005)	-0.024*** (0.005)		-0.039*** (0.005)		-0.031*** (0.004)
Trust	0.123*** (0.023)	0.100*** (0.022)		0.123*** (0.020)		0.084*** (0.019)
Religiosity	0.001 (0.005)	0.006 (0.005)		0.000 (0.004)		0.002 (0.004)
Log-Likelihood	-29,013.98	-31,391.87		-35,712.54		-39,548.43
Number of observations	13,254	14,472		13,254		14,472
Overall Significance Test	1620.90***	1561.03***		1778.70***		1775.18***
Wald Test				2.84*		3.49*
Adjusted R2	0.031	0.031				

Notes: Regression results controlled for countries and time dummies. Sample weights applied. Robust standard errors are shown in parentheses. The independence of equations hypothesis is tested by the Wald test. The H_0 assumes that equations are independent.

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 5
Freedom of Choice and Control and Preferences for Redistribution: Age Partition

	Ordered Probit		Bivariate Ordered Probit			
	Exogenous Fairness		Endogenous Fairness			
			First Stage	Second Stage	First Stage	Second Stage
	Young	Mature	Young		Mature	
(1)	(2)	(3)	(4)	(5)	(6)	
Subjective Freedom	0.045*** (0.007)	0.039*** (0.006)	0.028*** (0.007)	0.030*** (0.007)	0.039*** (0.007)	0.027*** (0.006)
Fairness - Lazy	0.166*** (0.032)	0.155*** (0.030)		0.699*** (0.229)		0.433*** (0.119)
Gender	0.029 (0.028)	-0.024 (0.027)	0.159*** (0.032)	0.007 (0.028)	0.032 (0.032)	-0.020 (0.024)
Marital Status	0.003 (0.006)	-0.009 (0.008)	-0.013* (0.007)	0.007 (0.005)	0.009 (0.010)	-0.010 (0.007)
Size of Town	0.011* (0.006)	-0.001 (0.005)	0.001 (0.007)	0.006 (0.006)	-0.015** (0.007)	-0.004 (0.005)
Self-Reported Income	0.029*** (0.006)	0.025*** (0.006)	0.050*** (0.007)	0.024*** (0.007)	0.042*** (0.007)	0.026*** (0.006)
Low Education	-0.131*** (0.039)	-0.184*** (0.030)	0.037 (0.047)	-0.135*** (0.037)	0.032 (0.038)	-0.201*** (0.028)
High Education	0.108*** (0.033)	0.128*** (0.035)	0.042 (0.039)	0.109*** (0.030)	-0.073 (0.045)	0.123*** (0.031)
Competition is good	-0.027*** (0.007)	-0.032*** (0.007)		-0.030*** (0.006)		-0.034*** (0.006)
Political Orientation	0.041*** (0.007)	0.057*** (0.007)		0.035*** (0.006)		0.055*** (0.006)
Trust	0.102*** (0.031)	0.063** (0.029)		0.072*** (0.027)		0.072*** (0.025)
Religiosity	0.007 (0.007)	0.002 (0.006)		-0.000 (0.006)		0.001 (0.005)
Log-Likelihood	-16,204.79	-18,168.49		-20,533.17		-22,442.02
Number of observations	7,504	8,227		7,504		8,227
Overall Significance Test	918.38***	871.24***		1103.48***		958.149***
Wald Test				4.39**		5.88**
Adjusted R2	0.035	0.027				

Notes: Regression results controlled for countries and time dummies. Sample weights applied. Robust standard errors are shown in parentheses. The independence of equations hypothesis is tested by the Wald test. The H_0 assumes that equations are independent. Respondent is listed as young if he/she is 30 years old or less. Respondant is listed as mature if he/she is 45 years old or more

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 6
Freedom of Choice and Control and Preferences for Redistribution: Geographic Partition

	Ordered Probit			Bivariate Ordered Probit					
	Exogenous Fairness			Endogenous Fairness					
	OECD	Transition	Developing	First Stage	Second Stage	First Stage	Second Stage	First Stage	Second Stage
				OECD	Transition	Developing	OECD	Transition	Developing
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
Subjective Freedom	0.024*** (0.008)	0.059*** (0.006)	0.033*** (0.007)	0.049*** (0.009)	0.014* (0.008)	0.064*** (0.007)	0.042*** (0.006)	0.011* (0.006)	0.016*** (0.006)
Fairness - Lazy	0.232*** (0.033)	0.107*** (0.028)	0.163*** (0.030)		0.634*** (0.159)		0.750*** (0.161)		1.001*** (0.205)
Age	-0.001 (0.001)	-0.001 (0.001)	0.000 (0.001)	0.002** (0.001)	-0.001 (0.001)	-0.003*** (0.001)	-0.001 (0.001)	0.002 (0.001)	-0.000 (0.001)
Gender	0.102*** (0.029)	0.003 (0.023)	0.001 (0.028)	0.170*** (0.035)	0.070** (0.029)	0.037 (0.031)	-0.011 (0.022)	0.023 (0.030)	0.007 (0.024)
Marital Status	-0.005 (0.007)	0.012** (0.006)	-0.009 (0.007)	0.009 (0.009)	-0.006 (0.007)	-0.007 (0.008)	0.011* (0.006)	-0.009 (0.007)	-0.001 (0.006)
Size of Town	0.004 (0.006)	0.002 (0.005)	0.015* (0.008)	-0.006 (0.008)	0.006 (0.006)	-0.011 (0.007)	0.001 (0.005)	-0.007 (0.008)	0.006 (0.007)
Self-Reported Income	0.031*** (0.006)	0.025*** (0.005)	0.028*** (0.006)	0.029*** (0.008)	0.024*** (0.006)	0.061*** (0.007)	0.014** (0.006)	0.049*** (0.007)	0.023*** (0.007)
Low Education	-0.181*** (0.037)	-0.187*** (0.031)	-0.101*** (0.035)	0.048 (0.045)	-0.172*** (0.036)	0.117*** (0.042)	-0.207*** (0.030)	-0.067* (0.038)	-0.096*** (0.032)
High Education	0.128*** (0.034)	0.193*** (0.029)	0.048 (0.035)	-0.150*** (0.044)	0.180*** (0.032)	0.044 (0.039)	0.167*** (0.028)	-0.071* (0.039)	0.063** (0.030)
Competition is good	-0.024*** (0.008)	-0.073*** (0.006)	-0.000 (0.006)		-0.019*** (0.007)		-0.074*** (0.006)		0.000 (0.005)
Political Orientation	0.099*** (0.009)	0.061*** (0.006)	0.022*** (0.006)		0.090*** (0.008)		0.053*** (0.006)		0.021*** (0.005)
Trust	0.088*** (0.031)	0.104*** (0.026)	0.116*** (0.033)		0.057** (0.027)		0.111*** (0.024)		0.104*** (0.027)
Religiosity	-0.002 (0.006)	0.017*** (0.006)	0.002 (0.007)		-0.000 (0.006)		0.016*** (0.005)		-0.002 (0.005)
Log-Likelihood	-12,850.94	-20,048.91	-17,368.69		-16,322.17		-24,381.77		-22,206.70
Number of observations	5,897	9,236	8,114		5,897		9,236		8,114
Overall Significance Test	536.04***	1467.00***	862.19***		560.62***		1655.652***		1216.180***
Wald Test					6.19**		12.66***		10.04***
Adjusted R2	0.024	0.039	0.032						

Notes: Regression results controlled for countries and time dummies. Sample weights applied. Robust standard errors are shown in parentheses. The independence of equations hypothesis is tested by the Wald test. The H_0 assumes that equations are independent.

*** Significant at 1%

** Significant at 5%

* Significant at 10%

Table 7
Freedom of Choice and Control and Preferences for Redistribution:
Robustness Check

	Ordered Probit	Bivariate	Ordered Probit
	Exogenous Fairness	Endogenous	Fairness
		First Stage	Second Stage
	(1)	(2)	(3)
Subjective Freedom	-0.026*** (-0.004)	0.053*** (0.004)	-0.022*** (0.003)
Fairness - Social Mobility	-0.196*** (-0.018)		-0.071** (0.036)
Age	0.001** (-0.001)	-0.002*** (0.001)	0.001* (0.001)
Gender	-0.038** (-0.016)	0.093*** (0.018)	-0.038*** (0.014)
Marital Status	0.011*** (-0.004)	0.007 (0.004)	0.009*** (0.004)
Size of Town	0.003 (-0.003)	-0.002 (0.004)	0.008** (0.003)
Self-Reported Income	-0.024*** (-0.004)	0.030*** (0.004)	-0.029*** (0.003)
Low Education	0.089*** (-0.020)	0.005 (0.024)	0.107*** (0.018)
High Education	-0.072*** (-0.020)	-0.000 (0.023)	-0.090*** (0.017)
Competition is good	-0.028*** (-0.004)		-0.022*** (0.004)
Political Orientation	-0.034*** (-0.004)		-0.033*** (0.004)
Trust	0.034** (-0.017)		0.036** (0.015)
Religiosity	-0.008** (-0.004)		-0.004 (0.003)
Log-Likelihood	-49,958.38		-63,203.75
Number of observations	23,160		23,160
Overall Significance Test	2559.62***		2732.37***
Wald Test			17.02***
Adjusted R2	0.029		

Notes: Regression results controlled for countries and time dummies. Sample weights applied. Robust standard errors are shown in parentheses. The independence of equations hypothesis is tested by the Wald test. The H_0 assumes that equations are independent.

*** Significant at 1%

** Significant at 5%

* Significant at 10%