Preferences for redistribution, the size of government and the tax system

Fatica, Serena

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Serena Fatica*

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Abstract

Using survey data from a cross-section of European countries, this paper analyzes the determinants of individual support for a large government motivated by redistributive policies and for progressive tax schedules. Preferences for political redistribution, as well as fairness beliefs, aversion to equality and perceptions on the actual functioning, the sustainability and the effects - among which immigration - of the welfare system are found to significantly determine the demand for more generous benefits and higher taxes. Moreover, preferences for redistribution play an important role in shaping the attitudes toward progressive income taxation, in addition to self-interest calculus. Overall, these findings are revealing on the political feasibility of tax reforms, as well as of alternative measures to achieve fiscal consolidation - a relevant policy issue after the strains put by the recent financial and economic crisis on national budgets.

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*European Commission. Mailing address: European Commission, SPA3 06/018, B-1049 Brussels. E-mail: sfatica@gmail.com. The views expressed should not be attributed to the European Commission.

1 Introduction

Economic theory analyzes preferences for redistribution using the canonical framework for utility maximization for consumption and leisure. Then, some mechanisms of aggregation of individual preferences determine the equilibrium level of taxes and social benefits, as in the basic workhorse political economic model provided by Meltzer and Richard (1981), who in turn build upon Romer (1975). In their framework, lump sum transfers are financed by a proportional tax on income. A prediction of the model is that the size of general redistributive programmes reflects the preferences of the median voters, and is determined by their relative position on the scale of productivity, a measure of the income generating ability. Since these seminal contributions, a number of factors other than current income have been proposed to explain different individual attitudes toward governmental redistribution. As an immediate extension of the self-interest motivation, Benabou and Ok (2001) put forward the prospect of upward mobility hypothesis. In their model, opposition to redistributive policies might come from people with income below the mean who rationally expect to move above the mean in the future. Departing from motivations directly linked to individual pecuniary gains, a few papers have highlighted the role of social values and beliefs. For instance, Piketty (1995) emphasizes the importance of past personal income mobility experience in shaping current views on the incentive costs of redistribution. Also, Benabou and Tirole (2005) suggest that parents might transmit certain views regarding the reality of inequality and social mobility to their children in order to influence their incentives. Different historical experiences may lead to various social norms about what is acceptable or not in terms of inequality in different countries (Alesina and Fuchs Schundeln, 2007). Moreover, perception of fairness matters. Alesina and Angeletos (2005) propose a model in which different beliefs about how fair social competition is and what determines income inequality influence the redistributive policy chosen democratically in a society. The interaction between self-fulfilled social beliefs and welfare policies may lead to multiple equilibria. In particular, high taxes and a high level of redistribution will prevail in equilibrium as a means to correct for income inequality derived from exogenous drivers, such as luck. Where, on the other hand, market outcomes are considered as mainly determined by individual effort, taxes and redistribution are lower. Interestingly, alongside different cultural views on the merits of equality versus indi-

vidualism, this framework contributes to explaining the observed systematic differences between the US and Europe, particularly western European countries, when it comes to redistributive policies, documented for instance in Alesina and Glaeser (2004). Finally, the desire to act in accordance with public values, or to obtain high social standing could play a critical role in the determination of preferences for redistributive policies, as highlighted by Corneo and Grüner (2000, 2002). Importantly, all these factors can be directly or indirectly incorporated into the standard utility maximization framework (Alesina and Giuliano, 2009).

As individual preferences will eventually translate into redistributive policies via some mechanism of aggregation, a critical issue is to identify the factors behind support for redistribution. A large body of empirical literature has investigated such determinants making use of survey data. In these contributions, preferences for redistribution (the dependent variable in the estimating equations) are generally captured through individual self-reported views on the whether or not the government should have an active role in reducing income inequality. Using recent data from the European Social Survey, we analyze the determinants of individual attitudes regarding governmental redistributive policies in 30 European countries. In particular, the data allows us to distinguish between two important dimensions of redistribution: the size of government (defined in terms of more generous social benefits financed by higher taxes) and the design of the personal income tax. In the first instance, our dependent variable, capturing the implications of redistribution for the public budget, can immediately measure individual support for a large government. We find not only that preferences for redistribution as traditionally measured in the literature are a significant determinant of such support, but also that other factors linked to the beliefs on effects of redistributive policies, the perceived functioning of the welfare state institutions, as well as trust explain different individual attitudes toward redistributive public policies. In addition, as the design of the tax system is a major element in redistributive policies of developed economies, we also investigate the determinants of stated preference for progressive tax schedules. Again, we find that preferences for redistribution, as well as the associated attitudes towards inequality and fairness, matter in explaining such preferences. While not influencing the support for a large government, self-interest makes people more averse to progressive taxation. The analysis can shed further light on what determines the observed size of governments and the design of personal income tax systems through

the demand side channel. Overall, our findings might give useful indications on the political feasibility of tax reforms, as well as of alternative measures to achieve fiscal consolidation. This is particularly relevant at the policy level, given the need to reduce public finance imbalances induced by the recent financial and economic crisis.

The rest of the paper is organized as follows. Section 2 briefly describes the data used in the paper. In section 3 we introduce our main variables of interest. Individual level evidence on the determinants of the support for a large government is presented in section 4. Section 5 investigates the determinants of preferences over the income tax schedule. Section 6 concludes.

2 Data

The data we use are from the fourth wave of the European Social Survey (ESS), conducted in 2008-2009. The European Social Survey (the ESS) is a biennial multi-country survey administered in a large sample of European nations. The survey has been conducted four times, with the first round fielded in 2002-2003, and the fourth in 2008-2009. The questionnaire consists of a 'core' module containing questions on socio-economic, political, psychological and demographic variables – which remains relatively constant from round to round – and two 'rotating modules', to be repeated at intervals, devoted each to a substantive topic or theme addressing particular academic or policy concerns. We use the fourth round because it is the only round containing detailed questions on attitudes towards welfare state and its financing, contained in the rotating module on 'welfare attitudes in a changing Europe'. Table 1 reports the country coverage and the sample averages of the main variables of interest.

3 Preferences for redistribution and the demand for a large government

In the literature individual preferences for redistribution have been captured using survey questions on the role of government in improving the standard of living of the poor people (e.g. in the General Social Survey for the US), or to ensure that everyone is provided for (e.g. in the World Value Survey). Alternatively, using the International Social

Survey programme, Corneo and Grüner (2002) employ a variable that asks whether the government should reduce differences in income between people with high income and those with low income. Question B30 in the ESS adopts a very similar formulation, and reads as follows:"*Please say to what extent you agree or disagree with (each of the) following statement(s): The government should take measures to reduce differences in income levels*". Respondents can choose among "agree strongly", "agree", "neither agree nor disagree", "disagree", or "disagree strongly", ordered on 1 to 5 classification. This provides an adequate measure for the preferences for political redistribution as traditionally intended in the literature. Figure 1 reports the density functions by country. With few exceptions, the distribution has a fat tail to the left, indicating a prevailing support for redistribution. Table 1 shows that in the whole sample the mean level is around 2.

In the ESS round 4 individual demand for different sizes of the government can be elicited from the following question: "*Many social benefits and services are paid for by taxes. If the government had to choose between increasing taxes and spending more on social benefits and services, or decreasing taxes and spending less on social benefits and services, which should they do?*". Answers are measured on a 0-10 scale, where 0 indicates that "*Government should decrease taxes a lot and spend much less on social benefits and services*", whereas 10 corresponds to "*Government should increase taxes a lot and spend much more on social benefits and services*". The question directly associates social benefits to the need of their financing via taxes. As such, by taking into account both the revenue and the expenditure sides of government activity, it can usefully be employed to recover people's preferences for the size of government. We plot the densities of this variable across the different countries in Figure 2. The histograms illustrate the presence of a non negligible number of observations at the two tails of the distribution within each country. Moreover, some common patterns emerge for specific group of countries. For instance, in the Nordic economies, characterized by already generous welfare systems, the distribution has a fat tail on the right. In another group of countries, which includes several Eastern European countries, the fat tail is to the left. Finally, a third group comprising, among others, countries in continental Europe such as France, Germany and Belgium, show more balanced distributions.

As the question focuses on taxes and expenditure linked to redistributive policies, it allows us to test explicitly how preferences for redistribution affect the demand for

government intervention. As a preliminary step, Figure 3 depicts the distribution of this latter variable categorized for the stated preferences for political redistribution. Evidently, those who prefer an increase in taxes and social benefits are concentrated among the respondents favoring government intervention in reducing differences in income. While this might not come as surprise, further country-level evidence shows that it might be indeed significant differences among the two variables when it comes to explaining actual aggregate outcomes. Figure 4 shows a positive correlation between a country GDP share of social protection spending and its demand for larger government. On the contrary, larger preferences for redistribution are negatively associated with the size of redistributive expenditures. The same picture emerges when considering the revenue side of the government budget (Figure 5). The share of tax revenues as a percentage of GDP correlates positively with the demand for larger government, whereas the correlation reverses when preference for redistribution are considered. The individual level analysis in the next section sheds some light on the additional factors that, by influencing the demand for larger government, might ultimately translate into the observed different sizes of national governments. Those factors relate to individual values and attitudes towards income inequality, as well as to beliefs of fairness, altruistic preferences and trust, as highlighted in the existing literature. In addition to these factors, however, perceptions of the sustainability of the welfare system, of the efficient and fair functioning of the institutions through which redistribution and social assistance takes place, as well as beliefs on the socio-economic consequences of redistribution contribute to explain the demand for more extensive government intervention.

4 Individual level evidence

Preferences on the size of government is our left-hand side variables throughout this section. Since the dependent variable is ordered and discrete, we adopt and ordered logit specification for the estimating equation. We include on the right-hand side of the equation a number of socio-demographic individual characteristics that are expected to influence people's attitudes towards government size[1]. In particular, we control for the

[1]See, for instance, Shapiro and Mahajan (1986) on gender differences in preferences for redistribution; Tan (2006), Neustadt (2010) and Scheve and Stasavage (2006) on the role of religion in shaping those preferences.

age and sex of the respondent, as well as civil status, religiosity (via a set of dummy for the different religious denominations), years of education, political orientation. A set of dummies captures labor market status, distinguishing among unemployed, out of the labor force and retired individuals. Country fixed effects are also included among the controls in order to absorb country-specific factors, thus reducing the scope for omitted variable bias in the cross-section.

Since the seminal contribution of Meltzer and Richard (1981), self-interest has been traditionally considered an important determinant of preferences for redistributive policies. Richer individuals should prefer smaller government as they are more likely to bear the costs through progressive taxation, while not receiving income-supporting transfers. Likewise, they are less likely to benefit from publicly provided private goods and social protection services. The level of current income should thus capture this effect. The ESS provides some information on total net household income, which includes income from all sources including labor income and income from capital and investments. In particular, each respondent is asked to report which income category, identified with a letter, best approximates his or her household's total net income. Identifying each bracket with its mid-point allows us to associate each income bracket with a monetary value[2]. Then, to proxy for the net pecuniary gain from governmental redistribution (Roberts, 1977), we construct a measure of the distance separating the household's income to the average income in the individual's country of residence by taking the log-difference of the the two values.

The baseline estimates are reported in Table 2, columns 1 and 2. Age and, expectedly, left-wing ideological orientation are positively associated with preferences for a larger government. The relationship is also highly statistically significant and substantially unaffected when country fixed effects are omitted. Women, more educated individuals as well as retired workers prefer larger government, although the statistical significance of the effects critically depend on the inclusion of fixed effects. The coefficient of the income variable is never estimated with precision and in the specification

[2]In contrast to the previous rounds, the brackets in ESS round 4 are national categories based on deciles of the actual household income distribution in the given country. However, using the decile-based income variable eliminates from the sample a number of countries for which it wasn't possible to construct such variable, and therefore still use the classification used in the previous ESS. To retain as many countries as possible, we identify each bracket with its mid-point. Monetary values are converted in Euros using the relevant exchange rates applicable at the time when the survey was fielded, made available in the documentation report.

with fixed effects has a positive sign. Thus, self-interest does not explain the demand for higher benefits and taxes.

We contend that, insofar as government intervention is associated with redistributive policies, preferences for redistribution should directly affect the demand for a large government. Hence, the specifications in columns 3 and 4 introduce also preferences for redistribution as an independent variable. The control is defined as a dummy variable that takes the value of 1 if the respondent agrees of strongly agrees that the government should reduce income differences. The point estimate of 0.345 is both sizable in magnitude and statistically significant (at 1% level). Removing country fixed effects reduces somewhat the value of the coefficient (to 0.26), which is still estimated with high precision. According to these estimates, the odds of preferring a larger government are about 30-40 percentage points higher for individuals favoring political redistribution compared to those that disagree on government reducing income inequality.

4.1 Fairness and altruism

Several contributions in the literature emphasize the importance of fairness of market outcomes and the perceived determinants of inequality, in particular whether inequality emerges from different efforts and ability of individuals or, alternatively, is mostly the result of luck, connections, perhaps unworthy activities etc. (Alesina and La Ferrara, 2005; Alesina and Angeletos, 2005). When they believe that income is determined by effort and talent, people might indeed see income differences as a just reward for these factors. In the other case they might be moved by considerations of fairness or social justice, and prefer corrections to the observed unequal market outcomes. Two questions allow us to capture these different aspects. The first statement reads: "*Large differences in people's incomes are acceptable to properly reward differences in talents and efforts*". Preferences for social fairness are captured using the question:"*For a society to be fair, differences in people's standard of living should be small*". Again, respondents are asked to express the degree to which they agree/disagree with the statements on a 1-5 scale. We define two dummy variables that take value of 1 in case the respondent declares to agree or strongly agree with each of the two statements. The results are reported in Table 3. Column 1 shows, not surprisingly, that those who believe on self-determination (i.e. that hard work is rewarded by higher income) are

less likely to support governmental redistribution. The point estimates suggest that the odds of supporting a large government are reduced by 15 percentage points. Of roughly the same magnitude, with a positive sign, is the estimated coefficient for the belief about unfairness of income differences. The effect is again strongly statistically significant.

Following Fong (2001), we also test altruistic motivations behind the demand for larger government by using the following question: "*It's very important to her/him to help the people around her/him. She/he wants to care for their well-being*". Respondents are asked to state to what extent the reported description corresponds to their own personal characteristics. The range of answers goes from 1 for "very much like me" to 6 for "not at all like me". Hence, we define a dummy variable taking value of 1 for category 1, and zero otherwise. The estimated coefficient has the expected positive sign and is significant at 5% level. Importantly, it does not affect the significance and the size of the coefficient for preferences for redistribution compared to the baseline estimates.

4.2 Trust

There is a large literature pointing to strong and significant effects of trust on economic outcomes. Recently, Algan et al. (2011), using the ESS, investigate extensively the effects of trust on many aspects of the welfare state. However, as stressed by Fehr (2009), answers to the general trust questions like those asked in the main cross-country surveys likely reflect not only individuals' beliefs about others' trustworthiness, but also individuals' preferences towards risk, and in particular towards social risk[3]. Alternatively, it has been argued (Cox, 2004) that trust may reflect pure altruistic preferences in addition to beliefs about others' trustworthiness, so that for given beliefs more altruistic individuals would exhibit more trust. In the previous section, we have addressed the latter concern by introducing explicitly a measure of altruism among the independent variables. To control for the effects of preferences for social risk that might partially show up in the trust measures, we resort to a set of questions in the ESS

[3]The classical question asked to elicits trust beliefs reads as follows:"Generally speaking, would you say that most people can be trusted, or that you can't be too careful in delaing with people?". The responses can be binary, or alternatively defined over a range of values (like in the ESS), which allows one to capture also the intensity of trust.

specifically intended to elicit individuals' beliefs about others' trustworthiness in the use of welfare services. The first of these statements asks to express agreement with the following:"*Most unemployed people do not really try to find a job*". A second question reads: "*Many people manage to obtain benefits and services to which they are not entitled*", and finally, a third statement is: "*Employees often pretend they are sick in order to stay at home*". Responses to the three statements are classified on a range from 1 to 5, where 1 indicates strong agreement and 5 strong disagreement. Thus lower values signal beliefs that other people are not trustworthy. Accordingly, for each of the statements, we built a dichotomous variable that takes value 1 if the respondent agrees or agrees strongly, and 0 otherwise. The last column of Table 3 shows that, as expected, those who do not trust others are less likely to support a large government compared to those who believe in people trustworthiness. The largest effect is to be attributed to the belief that people might be voluntarily unemployed, which reduces the odds of demanding larger governmental redistributive policies by 27 percentage points. The general possibility of people cheating in order to obtain more social benefits than what they would be legally entitled to, as well to benefit from special schemes such as paid sick leave, exert also a negative and strongly significant effect, with the point estimates around one third lower.

4.3 Effects of social benefits

Do the perceived impacts of social benefits contribute to shape the demand for redistributive policies? In a rather simplistic assessment, one could think that the welfare system will be supported to the extent that it is deemed as having corrective effects on existing economic and social distortions. Needless to say, however, the answer to this question lies crucially in what is considered distortive, and hence relates fundamentally to the issues of fairness and altruism investigated above. In fact, those who value social equality will support a large government if they perceive that social benefits are able to effectively combat poverty and reduce income inequalities. However, the overall impact is more subtle, as a generous welfare system might itself induce distortions to individual incentives. For instance, reducing income inequalities might correspondingly reduce the incentives to work hard or invest in human capital (Bell and Freeman, 1999). As emphasized by Alesina and Giuliano (2009), if there are externalities in effort and

education acquisition, this may work to the detriment of society as a whole, since the aggregate level of effort/investment in education would go down as a consequence of more generous redistributive policies, as shown by Benabou (2006; 2002). A trade-off would therefore emerge between equality and economic efficiency. A set of questions of the ESS allows us to analyze how the perceived effects of social benefits on society as well as on individual incentives affect the support for a large government. The general formulation reads: "*Please tell me to what extent you agree or disagree that social benefits and services in* [country]: ...", with the following statements associated: 1) "*... prevent widespread poverty?*"; 2) "*... lead to a more equal society?*"; 3) "*... make people lazy?*"; 4) "*... make people less willing to care for one another?*"; 5) "*... make people less willing to look after themselves and their family?*". The possible answers are coded on a 1-5 range, with 1 indicating strong agreement and 5 strong disagreement. As before we build for each of these questions dichotomous variables taking unit value if the respondent agrees or strongly agrees with the statements, and zero otherwise. The results of the estimation are reported in columns 1 and 2 of Table 4. Consistent with the findings in section 4.1, the perceived reduction in widespread poverty and in income inequality due to social benefits is associated with a higher likelihood of supporting a large government. The estimated coefficients reveal a sizable impact for the effects on inequalities. Column 2 reports the estimates for the variables capturing the perceived effects on individual incentives. All of them enter the equation with a negative sign and are highly significant. The point estimates show that the respondents are mainly concerned about the negative effects of social benefits on individual effort, rather than about those on altruistic attitudes towards other people or family members.

An important channel through which a generous welfare state might affect society as a whole is immigration. The idea that immigrants are attracted to the welfare state because of its benefits, in the form of social security, education, etc., is well known. The economic literature on welfare-induced migration is large and growing, with mixed results for what concerns both the US internal migration and more in general international migration (Razin et al., 2011). The main concerns are motivated by the potential distortions in the distribution as well as by the composition of migration flows, potentially biased towards poorer people and low-skilled workers[4]. These elements

[4] Another channel through which massive migration might put strains on national budgets is through the provision of public goods in general, as more heterogeneous societies, which could be the ultimate

would add to the fiscal cost of the welfare state, and have side-effects on the labor market outcomes, particularly for the lower end of the wage distribution. Such concerns have been emphasized after the latest rounds of enlargement of the European Union (De Giorgi and Pellizzari, 2009). Therefore, investigating if the possibility of welfare-induced immigration reduces support for more governmental redistribution in our sample of post-enlargement European countries is worthwhile. To this purpose, we employ the following ESS question: "*Please tell me to what extent you agree or disagree that social benefits and services in* [country] *encourage people from other countries to come and live here?*". Possible answers range as usual from strong agreement (valued 1) to strong disagreement (valued 5). We define accordingly a dummy variable equal to 1 in case the respondent agrees or strongly agrees with the statement, and zero otherwise. The estimates are reported in the last column of Table 4. The coefficient has a negative sign and is statistically highly significant (1% level). Hence, the 'threat' of immigration due to generous social transfers and services leads people to decrease their support for redistributive policies, ceteris paribus. The effect is also sizable in magnitude, as the odds of being more supportive for a large government decrease by 17% for those who believe that redistributive policies encourage immigration compared to the individuals who do not have such view.

4.4 Efficiency and impartiality

Perceptions on the actual functioning of the institutions through which redistribution and social assistance take place is likely to influence the support for a large government. Recent experimental evidence (Durante and Putterman, 2009) shows for instance that support for redistribution is sensitive to the cost associated with imposing a tax. In fact, if people perceive that resources are wasted due to inefficiencies, their willingness to contribute to the system might decrease. The same is likely to happen if they believe that they are not treated equally, for instance because institutions are prone to corruption. In this section we investigate how those additional factors affect the support for governmental redistribution.

A first set of questions asks opinions on the efficiency and fairness of the providers of health care services as well as of the tax authorities. A first question asks: "*How*

result of large-scale immigration, seem to be associated with larger expenditure on such goods (Alesina et al., 1997).

efficient do you think the tax authorities are at things like handling queries on time, avoiding mistakes and preventing fraud?". The answer ranges from 0 if the respondent considers that tax authorities are extremely inefficient to 10 if tax authorities are considered as extremely efficient. A related question asks: "*Tell me whether you think the tax authorities in your country give special advantages to certain people or deal with everyone equally?*". The answer ranges from 0 if the respondent considers that tax authorities give special advantages to certain people to 10 if he believes that tax authorities deal with everyone equally.

By the same token, similar questions are asked with reference to health services. The first relates to efficiency: "*Still thinking about the provision of social benefits and services, please tell me how efficient you think the provision of health care in [*country*] is*". Again, the answer ranges from very efficient to very inefficient, with the same 0-10 values associated as before. The final question reads: "*Please tell me whether you think doctors and nurses in [*country*] give special advantages to certain people or deal with everyone equally?*". Respondents can place their answer on a scale from 1 to 10, where again higher values indicate equal treatment.

For each of these questions we create a dummy variable that takes the value of 1 if the respondent is inclined to think that the system is inefficient or gives unequal treatment – i.e., if the answer to the corresponding question ranges from 0 to 3 – and zero otherwise. Therefore, we expect such variables to affect negatively the demand for a larger government, ceteris paribus. The results, reported in the first two columns in Table 5, show indeed that the odds of supporting a larger versus a smaller government decrease by roughly 20-25% for those who perceive redistributive institutions to be inefficient or inequitable compared to respondents who believe they are efficient and equitable.

4.5 Sustainability

When one considers its financing, the actual demand for more generous benefits might also be influenced by beliefs of sustainability. Considerations on the cost of providing widespread generous social benefits, in its current and prospective effects on the economy, might significantly influence the actual demand for them. To capture these effects, we resort to several questions of the ESS. A first general statement concerns whether

"*social benefits/services place too great a strain on the economy*". In addition, the opinion of the respondent is asked on whether she/he believes that "*social benefits/services cost businesses too much in taxes and charges*". Responses to the these statements are classified on a scale ranging from 1 for strong agreement to 5 for strong disagreement. Again, we construct two indicators equal to 1 when agreement or strong agreement is expressed, and zero otherwise.

On a related note, the views of the respondents on the long term sustainability of the welfare system are also recorded. In particular, respondents are asked to provide their opinion on whether "*the level of public health care in [country] will be affordable 10 years from now*". The following answers are possible: 1) "[country] *will not be able to afford the present level of public health care*"; 2) "[country] *will be able to afford the present level of public health care but not to increase it*"; 3) "[country] *will be able to afford to increase the level of public health care*". Here, we define a dummy that equals 1 if the present level of services is deemed unaffordable in the longer term, and zero in case of alternative answer. The results are reported in the last two columns in Table 5. As expected, the estimated coefficients have a negative sign. They are all statistically significant at the 1% level. Interestingly, support for governmental redistribution seems to be influenced more strongly by issues related to the current financing, rather than the prospective sustainability. The coefficients associated with the variables capturing beliefs on perceived strains placed on the economy, and on businesses in particular, are in fact double the size of the point estimates for the variables measuring long term sustainability. These latter beliefs reduce the odds of demanding more government redistribution by 20 percentage points.

5 Preferences for progressive tax schedules

The design of the tax system is a major element in redistributive policies of developed economies. Designed to collect a greater proportion of income from the rich relative to the poor, progressive tax schedules have the intended aim of reducing the inequality of disposable income relative to taxable income. However, as progressivity increases, individuals may respond by reducing their taxable income. This can be achieved by either decreasing labor supply or simply reporting a smaller share of true income through tax evasion or avoidance. Hence, taxes are a primary determinant of economic behavior and

may help to explain large observed differences in labor supply, economic activity, and growth across countries and over time. As actual tax systems arise through a political process, they are likely to represent some aggregation of individual preferences. These preferences may reflect individual self-interest, as highlighted by conventional political-economic theories, but also fairness aspects, e.g., fairness preferences, economic beliefs and fairness assessment of the status quo income inequality, as suggested by recent experimental evidence (Ackert et al., 2006; Durante and Putterman, 2009).

The empirical literature analyzing the determinants of preferences for alternative tax schedules is rather limited, reflecting probably the scarcity of ad hoc survey data. Using a survey on several OECD countries, Singhal (2009) investigates to which extent self-reported preferences reflect the actual tax schedules. Among the possible determinants, however, her data allows only the investigation of the self-interest motivation behind stated preferences. A broader analysis, which includes beliefs, fairness assessment and information, is carried out by Heinemann and Hennighausen (2010) in their study of attitudes towards progressive taxation in Germany.

A specific question in the ESS round four uncovers individual attitudes towards progressive taxation. Respondents are asked the following question: "*Think of two people, one earning twice as much as the other. Which of the three statements on this card comes closest to how you think they should be taxed?*". The participant can choose among the following answers:

1) *They should both pay the same share (same %) of their earnings in tax so that the person earning twice as much pays double in tax*

2) *The higher earner should pay a higher share (a higher %) of their earnings in tax so the person earning twice as much pays more than double in tax*

3) *They should both pay the same actual amount of money in tax regardless of their different levels of earnings*

Hence, alternative 1) describes a system of proportional income taxation, whereas alternatives 2) and 3) indicate progressive and regressive taxation, respectively.

As a preliminary cross-country analysis, Figure 5 depicts the scatterplots for the fraction of respondents who state their preference for a progressive tax schedule and the progressivity indexes, calculated for the personal income tax alone as well as taking the full tax wedge into account. The graphs show a positive correlation between the observed aggregate outcomes and individual preferences. Turning to the individual

data, Figure 6 depicts the response patterns across countries. While regressive taxation has a very limited appeal, in several countries progressive taxation is preferred by the vast majority of respondents. At face value, the large share of individuals calling for progressive income taxation across countries seems to corroborate the importance of motives other than self-interest calculus in determining preferences.

Thus, we investigate the determinants of such preferences in a multivariate framework. We adopt a multinomial logit specification for the estimating equation of the demand for the alternative types of tax systems. In the individual-level analysis we use preferences for proportional taxation as the base category, which allows us to directly test the determinants of the choice for a strictly progressive vs. a proportional income taxation. These are the most relevant alternatives from a policy perspective[5].

A number of the variables that affect the choice for larger government can be thought of as influencing also the design of the tax system. Hence, the right hand side of the equation controls extensively for socio-demographic variables, such as age, sex, years of education, religiosity, political orientation, labor market status. In line with the traditional political economy literature, we control for the self-interest motivation by including the variable defined as the log-difference of household income with respect to the average income in the country. The results are shown in Table 6, columns 1 and 2 without and with fixed effects, respectively. Confirming the hypothesis of a status quo bias (Sheffrin, 1994), the coefficient for age is positive and significant. Left-wing political orientation increases the propensity to prefer progressive over proportional taxation. Likewise, being unemployed is positively associated with the preference for progressive tax schedules.

Richer individuals are less likely to prefer progressive tax schedules. The coefficient is at the limit of the 1% significance level. This finding is fully consistent with the Meltzer and Richard (1981) hypothesis, but strikingly different from the results in the previous sections where the same variable was found exerting no statistically significant effect on the demand for a larger government. According to the point estimates, an increase in income by one standard deviation decreases the odds of choosing progressive versus proportional taxation by roughly 8 percentage points. The results are virtually unchanged irrespective of the presence of country fixed effects among the controls.

As discussed above, an important non-pecuniary motivation behind the demand for

[5]Regression results for the third category of regressive taxation are therefore not reported.

progressive taxation lies in individual attitudes towards redistributive policies. Hence, we add to the controls the dummy capturing the preferences for political redistribution (defined in section 4). The results are shown in column 3 of Table 6. The coefficient is positive and strongly significant, and its size substantial. According to this estimate, the odds of preferring progressive over proportional taxation are 50% higher for those who support political redistribution.

Finally, we control for beliefs of fairness/unfairness concerning inequalities in the distribution of income, as defined in section 4.1. As reported in column 4 of Table 6, beliefs that income differences are a just reward for individual effort lower the odds of preferring progressive taxation. On the other hand, considering differences in individuals' standard of living unfair leads to a stronger support for progressive taxation over proportional tax schedules. The estimated coefficient on preferences for redistribution, although marginally lower in size, retains its high statistical significance.

6 Conclusion

Using recent data from the European Social Survey covering 30 European countries, we analyze the determinants of individual attitudes regarding governmental redistributive polices along two dimension: the size of government, defined in terms of more generous benefits financed by higher taxes, and progressive taxation. In the first instance, our dependent variable, capturing the implications of redistribution for the public budget, can immediately measure individual support for a large government. We find not only that preferences for redistribution are a significant determinant of such support, but also that other factors linked to the beliefs on the social and economic effects of redistributive policies, the perceived functioning of the welfare state institutions, as well as trust, explain different individual attitudes toward redistributive public policies. In addition, as the design of the tax system is a major element in redistributive policies of developed economies, we also test the determinants of stated preference for progressive tax schedules. Again, we find that preferences for redistribution, as well as associated attitudes towards inequality and fairness, matter a lot in explaining such preferences. While not influencing the support for a large governrnent, self-interest makes people more averse to progressive taxation. Overall, these findings might give useful indications to assess the political feasibility of tax reforms, as well as of alternative measures to

achieve fiscal consolidation. This is particularly relevant for the policy agenda given the widespread need to correct public finance imbalances after the financial and economic crisis.

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Tables and graphs

Table 1: Individual-level data, sample and country averages

country	*code*	*sample*	*preferences for redistribution*	*demand for a large government*	*preferences for tax schedule*
Belgium	BE	1760	2.233	5.058	1.663
Bulgaria	BG	2230	1.907	4.846	1.632
Croatia	HR	1484	2.026	4.818	1.577
Cyprus	CY	1215	2.000	5.721	1.639
Czech Republic	CZ	2018	2.491	5.183	1.673
Denmark	DK	1610	2.896	5.978	1.706
Estonia	EE	1661	2.224	5.613	1.689
Finland	FI	2195	2.045	5.890	1.684
France	FR	2073	1.956	5.044	1.524
Germany	DE	2751	2.288	4.811	1.602
Greece	GR	2072	1.6022	5.164	1.551
Hungary	HU	1544	1.710	3.588	1.667
Ireland	IE	1764	2.210	5.199	1.835
Israel	IL	2490	2.032	5.510	1.845
Latvia	LV	1980	1.861	4.633	1.568
Lithuania	LT	2002	2.136	4.513	1.707
Netherlands	NL	1778	2.583	5.284	1.686
Norway	NO	1549	2.465	5.601	1.587
Poland	PL	1619	2.161	4.466	1.671
Portugal	PT	2367	1.795	4.912	1.515
Romania	RO	2146	1.882	3.629	1.591
Russia	RU	2512	2.098	5.215	1.618
Slovakia	SK	1810	2.182	5.201	1.608
Slovenia	SI	1286	1.844	4.548	1.679
Spain	ES	2576	2.011	5.276	1.652
Sweden	SE	1830	2.301	5.440	1.613
Switzerland	CH	1819	2.317	5.111	1.628
Turkey	TR	2461	1.727	5.312	1.540
Ukraine	UA	1 845	1.884	5.241	1.613
United Kingdom	GB	2352	2.474	5.231	1.707

Notes: The table lists all the countries for which individual-level data were available in the EES round 4. It reports the sample sizes and the country average for the three main variables of interest.

Table 2: Demand for a large government: baseline estimates

age	0.007	0.007	0.006	0.007
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
female	0.057	0.043	0.043	0.031
	(0.032)*	(0.032)	(0.031)*	(0.032)
married	-0.064	-0.083	-0.068	-0.088
	(0.032)*	(0.042)**	(0.031)**	(0.042)**
left	0.474	0.454	0.434	0.423
	(0.095)***	(0.091)***	(0.087)***	(0.085)***
catholic	0.012	-0.254	0.013	-0.269
	(0.029)	(0.081)***	(0.026)	(0.084)***
orthodox	-0.080	-0.273	-0.074	-0.286
	(0.069)	(0.278)	(0.072)	(0.283)
protestant	-0.045	0.150	-0.036	0.166
	(0.032)	(0.093)	(0.030)	(0.097)*
jew	-0.426	0.268	-0.378	0.263
	(0.103)***	(0.071)***	(0.113)***	(0.074)***
years of education	0.008	0.007	0.012	0.010
	(0.006)	(0.007)	(0.006)*	(0.007)
unemployed	0.114	0.013	0.104	-0.001
	(0.064)*	(0.070)	(0.064)	(0.071)
out of labor force	0.069	-0.002	0.068	-0.011
	(0.085)	(0.090)	(0.084)	(0.091)
retired	0.125	0.029	0.122	0.022
	(0.045)***	(0.046)	(0.044)***	(0.045)
income	0.037	-0.001	0.045	0.005
	(0.034)	(0.021)	(0.031)	(0.020)
preferences for redistribution			0.0345	0.0261
			(0.061)***	(0.065)***
Fixed effects	Y	N	Y	N
Observations	37547	37547	37301	37301
Pseudo R-sq.	0.020	0.006	0.022	0.007

Notes: This table presents estimates of the determinants of preferences on the size of government at the individual level. The estimation method is the Maximum Likelihood ordered logit model. Robust standard errors clustered by country are presented in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively.

Table 3: Demand for a large government: fairness and trust

age	0.006	0.006	0.007
	(0.001)***	(0.001)***	(0.001)***
female	0.036	0.039	0.043
	(0.031)	(0.030)	(0.031)
married	-0.069	-0.071	-0.073
	(0.031)**	(0.031)**	(0.030)**
left	0.414	0.430	0.409
	(0.081)***	(0.085)***	(0.083)***
catholic	0.016	0.013	0.021
	(0.026)	(0.025)	(0.028)
orthodox	-0.060	-0.073	-0.059
	(0.071)	(0.074)	(0.072)
protestant	-0.030	-0.040	-0.045
	(0.031)	(0.030)	(0.028)
jew	-0.299	-0.380	-0.378
	(0.109)***	(0.106)***	(0.117)***
years of education	0.013	0.011	0.005
	(0.006)**	(0.006)*	(0.005)
unemployed	0.094	0.104	0.054
	(0.066)**	(0.063)	(0.064)
out of labor force	0.073	0.063	0.031
	(0.088)	(0.086)	(0.082)
retired	0.122	0.125	0.142
	(0.043)***	(0.043)***	(0.042)***
income	0.048	0.047	0.034
	(0.030)	(0.031)	(0.029)
preferences for redistribution	0.273	0.342	0.378
	(0.050)***	(0.061)***	(0.062)***
income differences reward effort	-0.159		
	(0.050)***		
income differences unfair	0.161		
	(0.036)***		
important to help others		0.071	
		(0.034)**	
unemployed do not seek job			-0.318
			(0.050)***
people cheat to get more social benefits			-0.200
			(0.034)***
employees cheat on sick leave			-0.192
			(0.036)***
Fixed effects	Y	Y	Y
Observations	36880	36430	35249
Pseudo R-sq.	0.023	0.022	0.027

Notes: This table presents estimates of the determinants of preferences on the size of government at the individual level. The estimation method is the Maximum Likelihood ordered logit model. Robust standard errors clustered by country are presented in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively.

Table 4: Demand for a large government: effects of social benefits

age	0.006	0.007	0.006
	(0.001)***	(0.001)***	(0.001)***
female	0.052	0.041	0.043
	(0.032)	(0.031)	(0.032)
married	-0.071	-0.071	-0.077
	(0.032)**	(0.031)**	(0.031)**
left	0.432	0.394	0.435
	(0.086)***	(0.078)***	(0.085)***
catholic	0.011	0.030	0.011
	(0.027)	(0.028)	(0.028)
orthodox	-0.070	-0.091	-0.078
	(0.071)	(0.080)	(0.079)
protestant	-0.055	-0.026	-0.033
	(0.031)*	(0.026)	(0.030)
jew	-0.286	-0.448	-0.408
	(0.102)***	(0.116)***	(0.121)***
years of education	0.009	0.006	0.011
	(0.006)	(0.006)	(0.006)*
unemployed	0.101	0.095	0.092
	(0.064)	(0.063)	(0.062)
out of labor force	0.056	0.047	0.052
	(0.090)	(0.085)	(0.079)
retired	0.122	0.143	0.110
	(0.044)***	(0.043)***	(0.043)**
income	0.045	0.047	0.047
	(0.030)	(0.032)	(0.032)
preferences for redistribution	0.330	0.330	0.346
	(0.061)***	(0.059)***	(0.061)***
social benefits:			
prevent poverty	0.123		
	(0.032)***		
lead to equal society	0.236		
	(0.039)***		
make people lazy		-0.475	
		(0.047)***	
make people less willing to care for one another		-0.129	
		(0.032)***	
make people less willing to look after selves and family		-0.243	
		(0.031)***	
encourage immigration			-0.192
			(0.046)***
Fixed effects	Y	Y	Y
Observations	36413	36398	36076
Pseudo R-sq.	0.024	0.030	0.023

Notes: This table presents estimates of the determinants of preferences on the size of government at the individual level. The estimation method is the Maximum Likelihood ordered logit model. Robust standard errors clustered by country are presented in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively.

Table 5: Demand for a large government: functioning and sustainability

age	0.007	0.007	0.008	0.007
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
female	0.049	0.044	0.030	0.051
	(0.031)	(0.033)	(0.031)	(0.032)
married	-0.064	-0.062	-0.052	-0.060
	(0.031)**	(0.032)*	(0.032)	(0.032)*
left	0.451	0.478	0.383	0.441
	(0.086)***	(0.086)***	(0.076)***	(0.087)***
catholic	0.008	-0.001	0.035	0.017
	(0.027)	(0.026)	(0.028)	(0.028)
orthodox	-0.072	-0.090	-0.074	-0.079
	(0.077)	(0.090)	(0.072)	(0.072)
protestant	-0.046	-0.048	-0.043	-0.033
	(0.029)	(0.028)*	(0.078)	(0.028)
jew	-0.323	0.426	-0.379	-0.371
	(0.097)***	(0.114)***	(0.122)***	(0.114)***
years of education	0.013	0.012	0.008	0.012
	(0.006)**	(0.006)**	(0.005)	(0.006)**
unemployed	0.129	0.097	0.091	0.110
	(0.063)**	(0.065)	(0.062)	(0.064)*
out of labor force	0.088	0.052	0.062	0.057
	(0.079)	(0.082)	(0.085)	(0.079)
retired	0.107	0.122	0.109	0.106
	(0.043)**	(0.041)**	(0.041)***	(0.046)**
income	0.045	0.050	0.046	0.040
	(0.031)	(0.032)	(0.031)	(0.031)
preferences for redistribution	0.356	0.372	0.336	0.357
	(0.061)***	(0.060)***	(0.059)***	(0.061)***
health care providers inefficient	-0.231			
	(0.042)***			
health care providers inequitable	-0.256			
	(0.036)***			
tax authorites inefficient		-0.251		
		(0.060)***		
tax authorites inequitable		-0.307		
		(0.044)***		
social benefits too costly for business			-0.438	
			(0.040)***	
social benefits strain the economy			-0.457	
			(0.051)***	
social benefits unsustainable in 10 years				-0.225
				(0.037)***
Fixed effects	Y	Y	Y	Y
Observations	36598	34297	35326	35492
Pseudo R-sq.	0.024	0.025	0.031	0.024

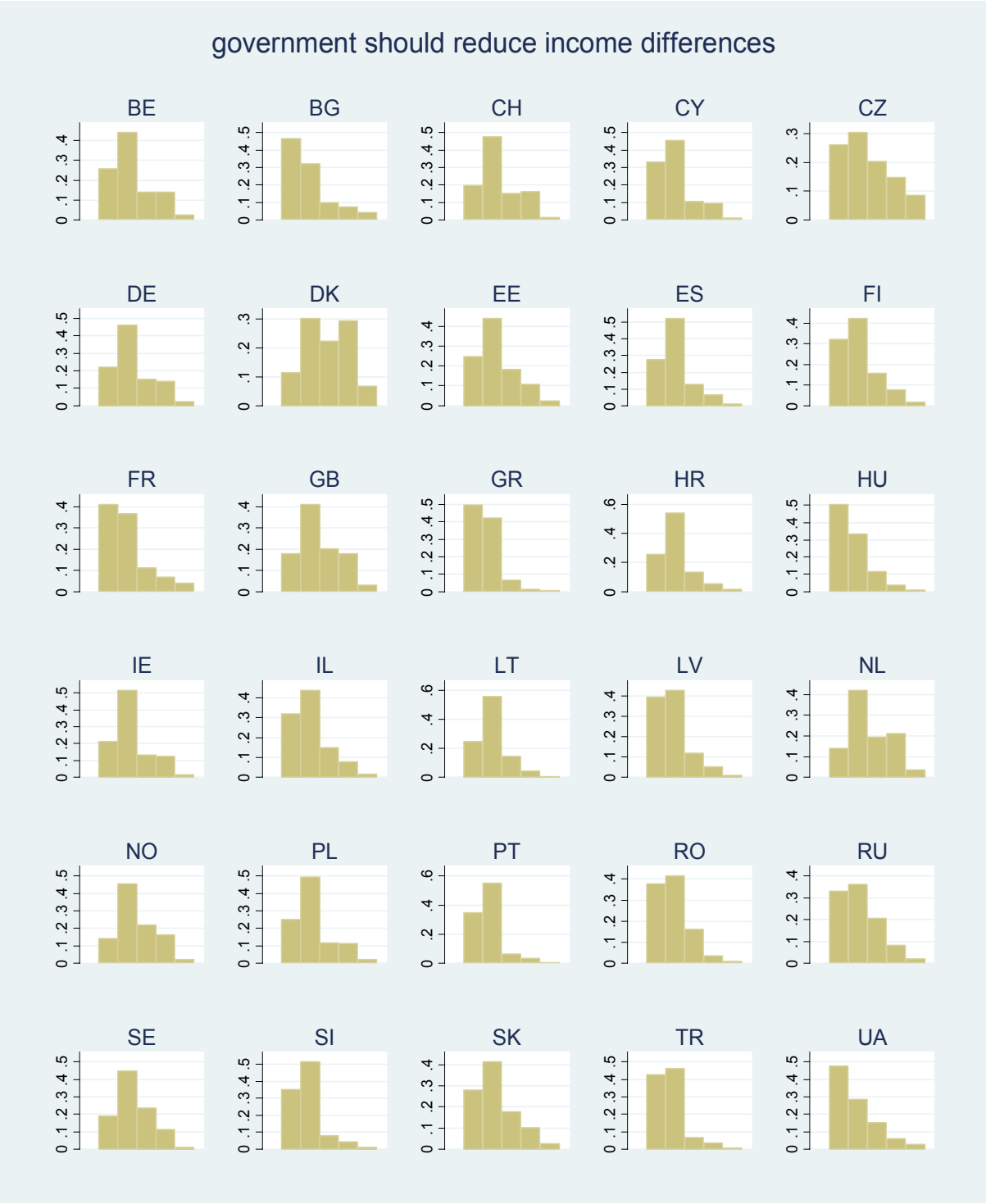
Notes: This table presents estimates of the determinants of preferences on the size of government at the individual level. The estimation method is the Maximum Likelihood ordered logit model. Robust standard errors clustered by country are presented in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively.

Table 6: Preferences for progressive taxation

age	0.010	0.009	0.009	0.009
	(0.001)***	(0.001)***	(0.001)***	(0.001)***
female	- 0.050	-0.043	-0.062	0.079
	(0.031)	(0.033)	(0.035)*	(0.037)**
married	0.030	0.045	0.042	0.042
	(0.039)	(0.027)*	(0.027)	(0.027)
left	0.290	0.310	0.259	0.230
	(0.048)***	(0.050)***	(0.043)***	(0.040)***
catholic	0.087	0.019	0.020	0.027
	(0.112)	(0.043)	(0.044)	(0.043)
orthodox	-0.001	0.135	0.129	0.142
	(0.073)	(0.056)**	(0.054)*	(0.057)**
protestant	0.079	0.009	0.019	0.023
	(0.073)	(0.047)	(0.047)	(0.045)
jew	1.126	0.087	0.125	0.201
	(0.058)***	(0.092)	(0.092)	(0.090)**
years of education	-0.005	-0.016	-0.012	-0.011
	(0.008)	(0.006)***	(0.006)**	(0.006)**
unemployed	0.169	0.176	0.161	0.158
	(0.072)**	(0.061)***	(0.068)***	(0.069)***
out of labor force	0.013	0.016	-0.007	-0.000
	(0.102)	(0.099)	(0.099)	(0.102)
retired	-0.044	-0.012	-0.014	-0.021
	(0.053)	(0.046)	(0.046)	(0.045)
income	-0.071	- 0.074	-0.062	-0.056
	(0.028)**	(0.018)***	(0.017)***	(0.017)***
preferences for redistribution			0.445	0.357
			(0.055)***	(0.043)***
income differences reward effort				-0.226
				(0.036)***
income differences unfair				0.170
				(0.038)***
Fixed effects	N	Y	Y	Y
Observations	38090	38090	37834	37336
Pseudo R-sq.	0.015	0.031	0.037	0.040

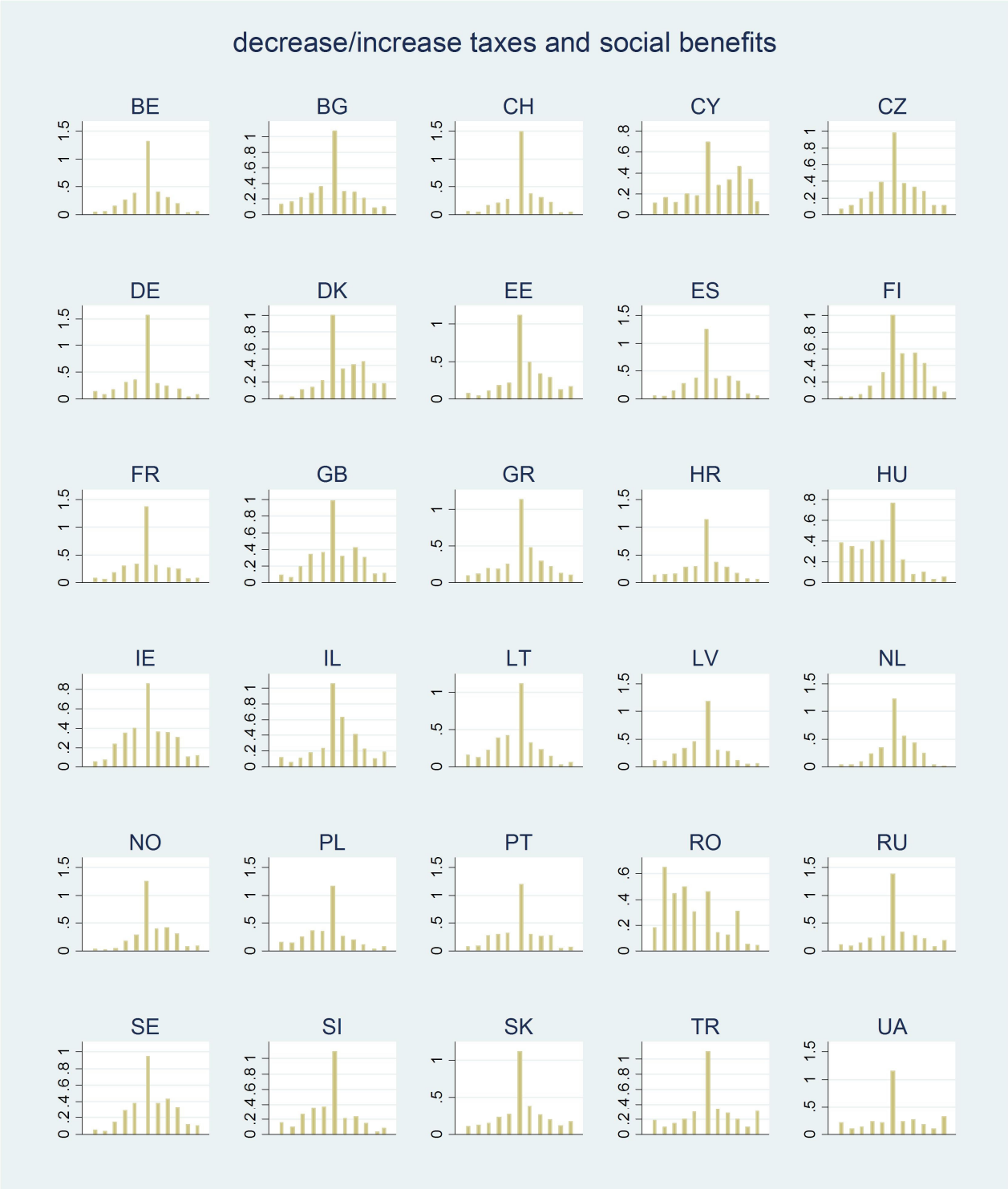
Notes: This table presents estimates of the determinants of preferences for progressive tax schedules at the individual level. Preferences for proportional taxation are the baseline category. The estimation method is the Maximum Likelihood multinomial logit model. Robust standard errors clustered by country are presented in parentheses. ***, ** and * denote significance at the 1, 5 and 10% levels, respectively.

Figure 1. Preferences for redistribution: density functions by country



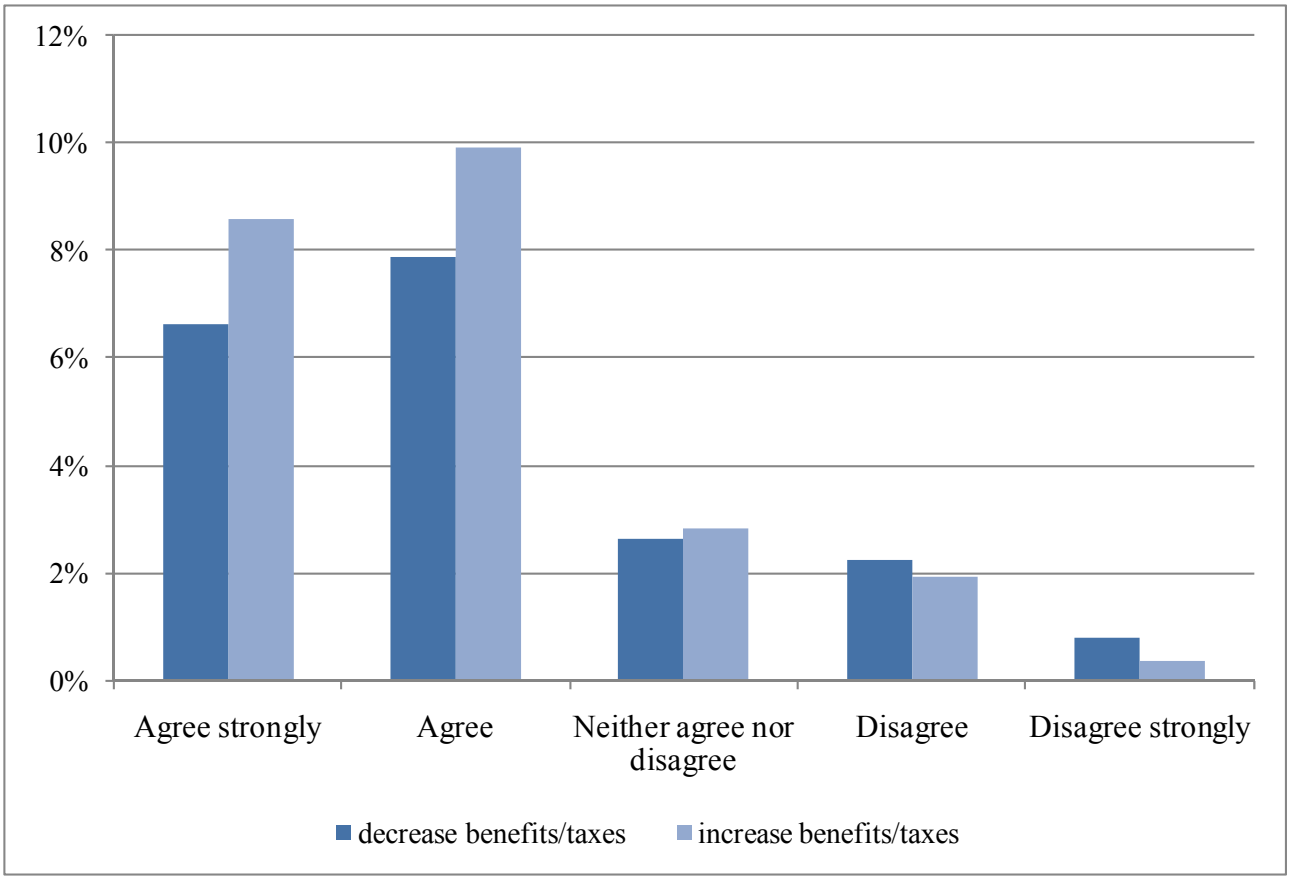
Agree strongly (1) – disagree strongly (5)

Figure 2. Opinions on the size of government: density functions by country



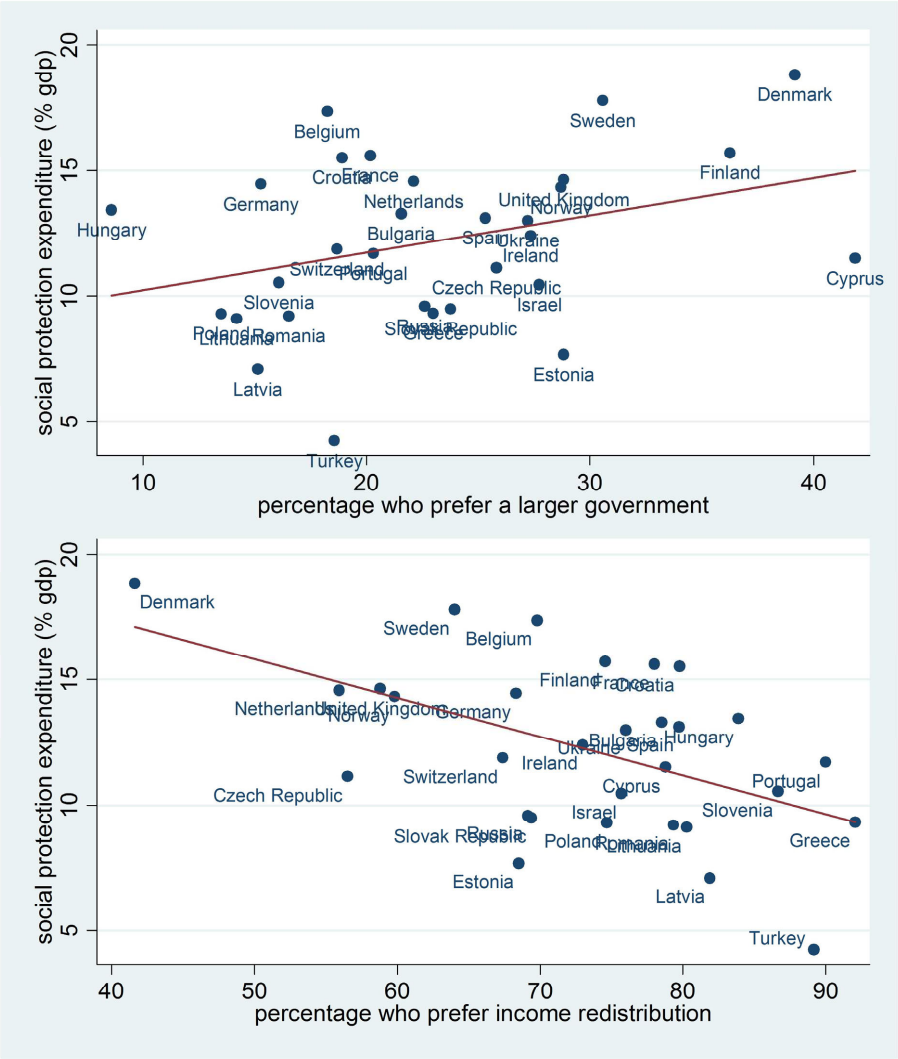
Government should decrease taxes a lot and spend much less on social benefits and services (0) - Government should increase taxes a lot and spend much more on social benefits and services (10)

Figure 3. Preferences for redistribution and opinions on the size of government



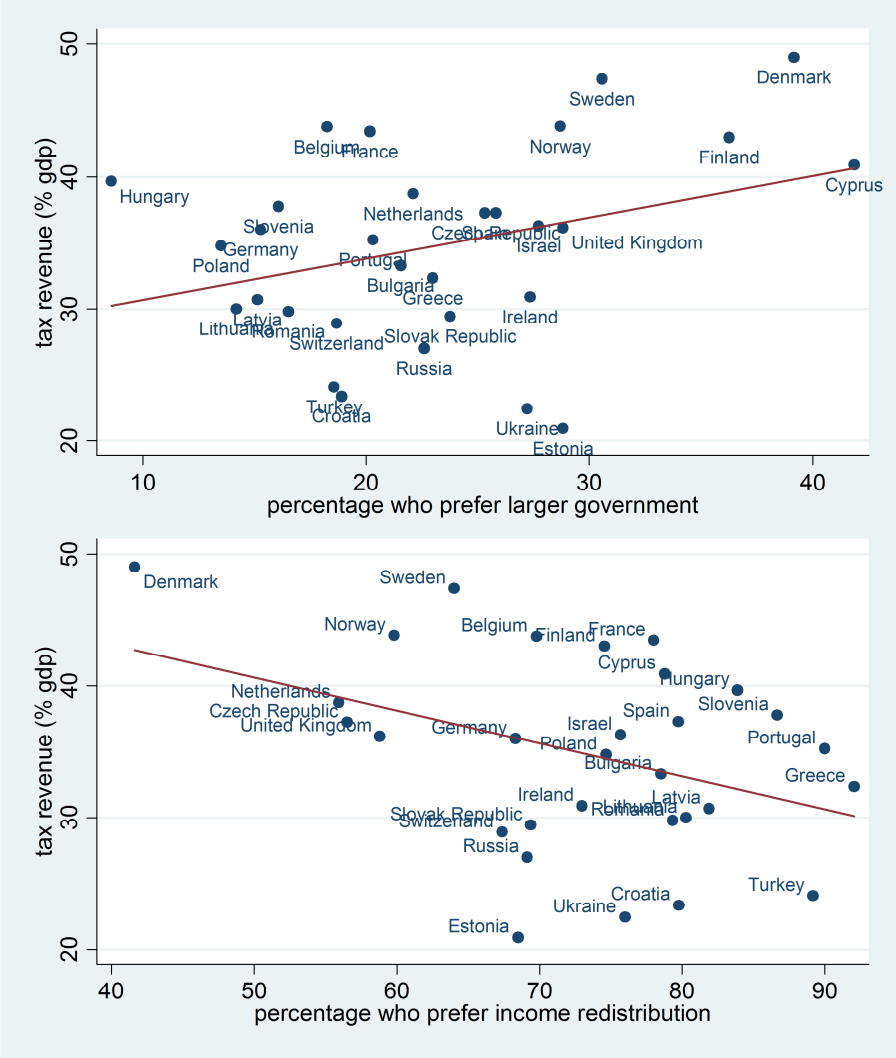
The histogram shows the distribution of answers to the ESS question on decreasing vs. increasing social benefits and taxes, categorized by the responses given to the question on preferences for redistribution. The answers on the X-axis refer to the question: "The government should take measures to reduce differences in income levels".

Figure 4. Social expenditure, preferences for redistribution and demand for a large government



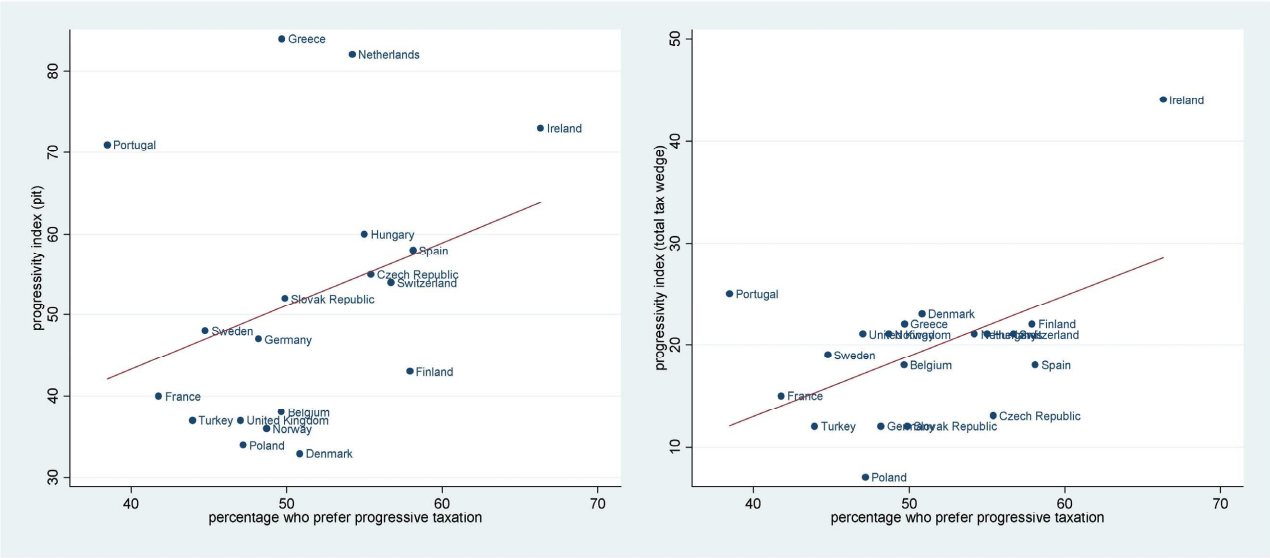
The scatterplots illustrate the cross-country correlations between the percentage of GDP allocated to social protection spending and the fraction of respondents to the ESS who want an increase in taxes/benefits (upper panel) and of those who prefer political redistribution (lower panel).

Figure 5. Tax revenue, preferences for redistribution and demand for a large government



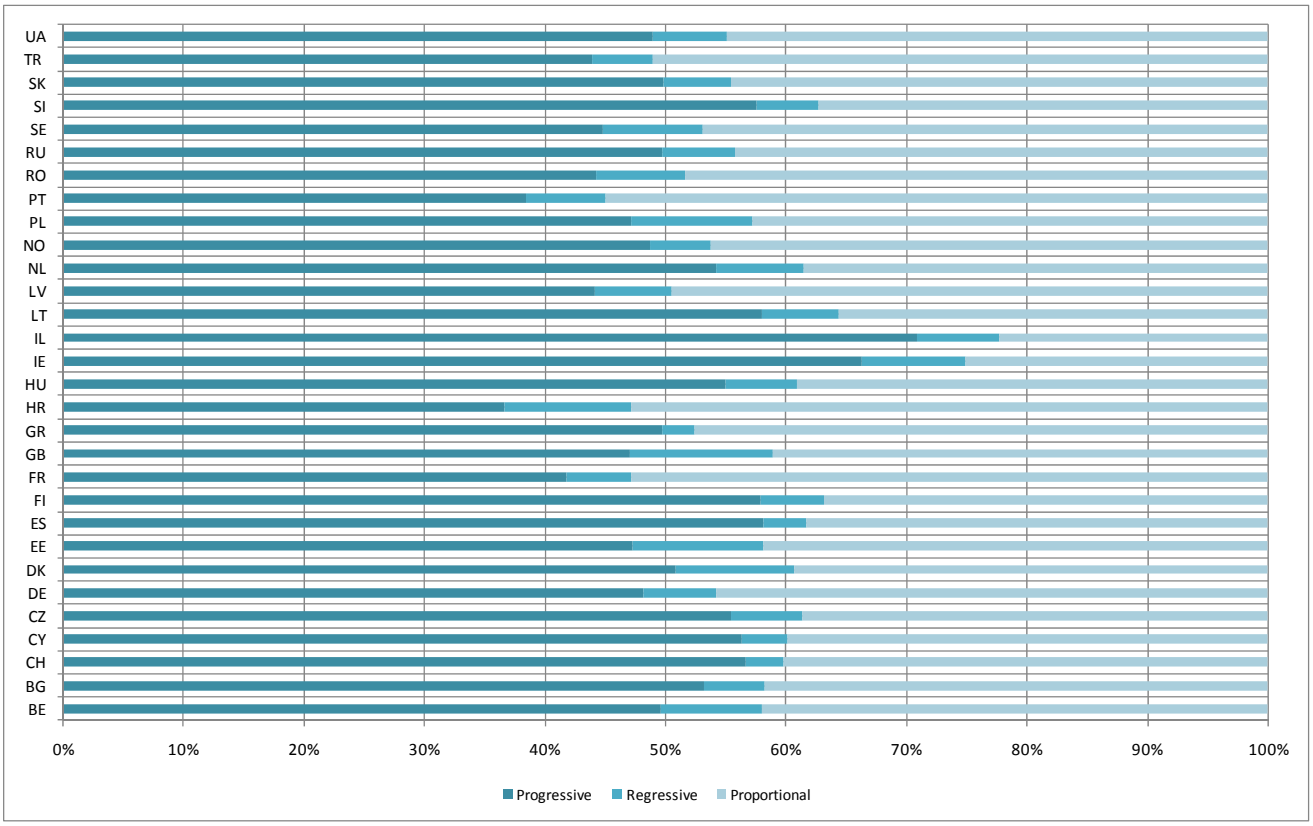
The scatterplots illustrate the cross-country correlations between tax revenue in percentage of GDP and the fraction of respondents to the ESS who want an increase in taxes/benefits (upper panel) and of those who prefer political redistribution (lower panel).

Figure 6. Preferences for progressive tax schedules and observed progressivity



The scatterplots illustrate the cross-country correlations between the fraction of respondents to the ESS who want a progressive tax schedule and the progressivity index for the personal income tax (left panel) and for the total tax wedge (right panel).

Figure 6. Individual preferences over alternative tax schedules



The graph shows the fraction of respondents to the ESS question on the preferred type of personal income tax.