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Income Distributions, Inequality Perceptions and Redistributive Claims in European Societies

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Abstract

In this paper we analyse how redistributive preference relates to actual income and to its distribution. For measuring the relationship on macro level, we define distance based measures of income inequality (P-ratios, based on data from LIS) and test them for their direct and for their contextual effects on aggregate (country level) and on individual redistributive claims. For measuring redistributive preference we develop a composite index using available public opinion (Eurobarometer) data for the European Union member states. On macro level there is a continued and high support of state redistribution in many European countries but the cross-country variance is also high. Preferences for redistribution correspond to various aspects of inequality (most notably, to the extent and depth of relative poverty). On micro level the redistributive preference, while mostly derived from rational self interest (material position, labour market status, expected mobility), is also driven by general attitudes about the role of personal responsibility in one's own fate and by general beliefs about causes of poverty and the like. While the affluent, the middle and the poor have different appetite for redistribution everywhere, the distance between their attitudes also seems to be determined by the distance between their relative positions (ranks in the distribution). In countries having larger level of aggregate inequalities the general redistributive preference (of the rich, of the middle and of the poor) is higher, however in countries with very high levels of inequalities the difference in redistribution preference begins to decrease, which is a hint for a curvilinear relationship. The slope of this socio-economic gradient seems, however, steeper in countries with middle inequality levels. The results of the paper can contribute to a refinement of the predictions developed in the frame of the median voter theorem and, via this, to a better understanding of political processes.

JEL: D31, D63, H30

1. Introduction

Demand for redistribution is an inherently political issue and existing policies of redistribution are increasingly challenged under the conditions of the economic crisis. While various governments need to face increased budget deficits, they also need to communicate the questions of (un)sustainability of their welfare systems to their electorate. This task can be especially difficult when electorates see inequalities rising (whatever the actual inequality statistics objectively show for them). This makes the study of the relationship between level of inequalities and the demand for redistribution especially appealing also for social sciences.

There are a number of theoretical suggestions about the relationship between inequalities, popular welfare attitudes and redistributive policies. A major proposition, that of the so-called Meltzer - Richard (hereto: MR) paradigm (which applies the median voter theorem on redistributive policies), asserts that a larger level of inequalities in a certain country will predict larger level of redistribution since low income citizens outvote those above average incomes (Meltzer and Richard, 1981). The fact that this relationship empirically does not always hold is not very much surprising, however. The chain of causation between inequality and redistribution is long, with many intermediate steps, a fact that makes us cautious in interpreting any direct correlations between the two end-variables. In our paper we join those trying to refine the predictions of the MR theorem via a more detailed understanding of the structure of inequality on the one hand and of the structure of redistributive preferences on the other hand. Also, we attempt to refine the understanding of income inequalities, with the aim of better identifying the context that may drive respondents' opinions (and, consequently, voters' decisions).

The organization of the paper is the following: section II. puts our attempts into a theoretical contexts, specifies the frame of reference for the empirical analysis. Section III. describes data and the models applied. Section IV. is about the relationship between macro level income inequalities, their perceptions and the approval rates for various redistributive policies. In section V. we present a multivariate analysis of redistributive attitudes, with a great deal of attention to contextual effects. Section VI. concludes.

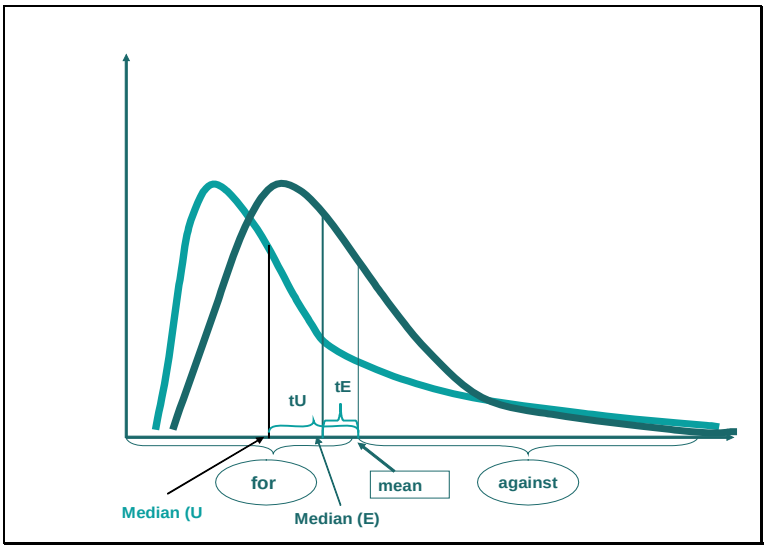
2. Research questions: the preferences for redistribution

Meltzer and Richard, (1981) suggests that larger level of inequality can lead to larger demand for redistribution. As their argument goes, if inequality is defined by the distance between the median and the average incomes and the median voter is the same as the person with median incomes, under assumptions of self interest she would certainly prefer bigger redistribution (higher taxes) than a person having an income above the median (Figure 1). This would imply higher level of redistribution in countries with larger inequalities. However, the evidence is very mixed in this respect, as it is shown by empirical tests (reviewed recently by Borck 2007, McCarty and Pontusson, 2009).

There is a large literature on how welfare attitudes and redistributive claims might relate to level, structure or dynamics of inequality. (for general accounts on various aspects see Borck 2007, Kenworthy et al, 2007, Alesina and Giuliano, 2009, Keely and Tan, 2007, Lupu and Pontusson, 2009, Senik, 2009).

Our starting point is that the lack of a strong correlation between overall aggregate (country level) pre-tax and transfer inequality on the one hand and the level of overall redistribution (however we define it) on the other hand, does not mean too much for the actual relationship between inequality and redistribution. To explore on this, it is useful to structure the problem along the elements of the long causal chain that can be assumed between the two end-variables. To understand more on this, we need to go step by step. We offer distinguishing between the following questions, starting with micro aspects and going towards macro aspects.

Figure 1 A stylised illustration of the Meltzer-Richard logic of the argument



Micro aspects

1: First and foremost: is there a negative correlation between actual income situation of the respondent and his/her taste for redistribution? In other words: will individual position in the overall income rank predict redistributive preferences (of the individuals) reasonably well? This can be tested via correlates of income and redistributive preference, from microdata. Should there be a significant negative correlation, we can conclude that higher income people prefer less redistribution and lower income people would prefer higher levels of redistribution. We call these factors for further use in this paper **„pure material self interest".** For the definition of material self interest, however, it is not only income or a stock of wealth that matters from the point of view of the respondents but also their labour market (class) position – since it also reflects/proxies differential reliance on benefits/provisions received from state. Clearly, one can expect different level of pro-state attitudes from permanent employees, the self-employed and from those relying on permanent incomes from various state welfare provisions.

2: As in many studies it is suggested that the correlation linking material position and welfare attitudes is rather weak, a second question emerges: what explains the deviations? How can it be that some of the relatively rich (with above median incomes) people may have a taste for redistribution, while others with low (below median) incomes may not particularly like the idea of large levels of redistribution? In principle, there are many potential reasons for these types of differences, ranging from perceptional problems (when people misjudge, i.e. underestimate or overestimate their actual positions in the income rank), trough conditional preference formation (relative to others or relative to past experiences or future expectations) to motivations other than pure self interest (Tóth 2006, 2008). To go through all these would go far beyond the limits of this paper. We, therefore, focus only some of these factors.

2.1: One argument remains in the frame of the assumptions of rational, self-interested individuals. It might, for example, easily happen that below median voters have positive expectations about the likely improvement of their situations (and their chances to raise above the median) in the future. Bénabou and Ok (2001) developed a formal model of the relationship between redistributive claims and the prospect for upward mobility (they call it POUM model). As they argue, there might be low (below median) income persons refusing redistribution if they expect improvements in their positions while some of the currently rich (or at least some of those above the median), if facing challenges of income deteriorations may insist on keeping redistribution arrangements in place. There might, however, be a mixture of motivations behind the POUM hypothesis. People may expect absolute income gains in the future and they may equally expect relative gains as compared to others. Both of these expectations may result in an acceptance of more redistribution. Tests of these hypotheses have shown positive results. Raval-

lion and Lokshin (2000), for example, found that a very high proportion of Russians in 1996 favoured redistribution, including some of the rich. Alesina and La Ferrara (2005) stress the importance of actual (as estimated on the basis of long term panel studies) social mobility as a source of deviation from the predictions based on actual income position of the respondents (voters). We call these subjective variables **„expectations"** in our analysis[1].

2.2. Further, the complex nature of human motivations in these public policy issues may be another source for the deviations. Human conduct may, in addition to pecuniary motives, be driven by preferences embedded in the general value systems people endorse. On the one hand, egalitarian attitudes lead to a critique of the reward system of market economies and a preference for redistribution to correct for these failures will be formed. Also, systems with strong egalitarian features may be criticized by the actors involved as those putting too little stress on merit-related rewards. Or, to put it differently, in certain regimes (like in transition countries experiencing a move from communism to a capitalistic social order) the moral authority of the free market may form the base for inequality evaluations (Kelley any Zagorski, 2004). Corneo and Grüner (2002) and Fong (2001, 2006), based on ISSP data find that public values (social preferences) also play a significant role in shaping preferences over redistribution. Further, the large literature on the legitimation of the welfare states assumes that people have aesthetic preferences for certain arrangements in the social fabric, that is, they also derive guidance from ideological value systems when forming their opinion on welfare state expenditures. Svallfors (1997) shows that while level of support is related to welfare regimes (Esping-Andersen, 1990, Ferrara 1996, Bonoli 1997), they are of little use in explaining group difference between welfare attitudes. Rather, class divisions and gender explain differing attitudes towards the welfare states across the various welfare regimes. (On other aspects of class positions, see Svallfors, 1997, Kumlin and Svallfors, 2008). In some papers, the larger demand for redistribution is also attributed to cultural values and to socialisation. For these studies, a natural candidate for observations is the group of post transition countries as the ones who changed economic systems and, on the other hand the communities of migrant peoples, who change their countries of residences. Alesina and Fuchs-Schündeln (2005) and Suhrcke (2001) both find significant effect for the East-West dummy variable when regressed on inequality or redistribution preferences2. Gijsberts (2002) also point out that observed differences in inequality aversion between market economies and the previous state socialist countries are not due to differences in social structure, but, rather, to socialisation and values. Luttmer and Singhal (2008) draw the attention to the persistence of general attitudes towards the state in case of migrant people. We call these arguments **„social context/values explanations"**.

1 The extent to which we may expect POUM to hold is very much likely dependent upon the general risk aversion of various segments of the society. The interaction between POUM and risk aversion, for example, accentuates excensive high risk holders' fears of downward mobility, pushing their demand for redistribution higher. To explore further on this is clearly a task for the future.

2 Murthi and Tiongson, 2008, however, find little evidence for a "socialist legacy" in general.

2.3. In addition to the belief in the fair operations of the economic system (also assumed to contribute to a smaller demand for redistribution, see Fong, 2001, 2006, Alesina and La Ferrara, 2005) a related issue is the popular evaluation of conditions of getting ahead in society. Shall people in general associate poverty with lack of effort, motivations to endorse (further) redistribution will vanish. Alternatively, "votes" for redistribution can be stronger in case of a general belief that poverty is a result of bad luck rather than nonexistent individual efforts. Picketty (1995) in an early article, also derived the demand for redistribution from experience of social mobility (and the beliefs about whether effort and luck determine individual success.) Fong (2001) observes the influence of social preferences (depending on how the agents perceive determinants of poverty and affluence in their societies: do the associate bad luck or lack of effort with poverty). From different perspectives though, Alesina and Glaeser (2006) and Osberg and Smeeding (2006) both point out that the mix of personal and social reasons attributed to poverty are significant determinants of inequality evaluations and redistributive preferences. We call this type of argument **„failure attribution arguments"** referring to the fact that poverty might be explained by private failures (bad luck, laziness, ect.) or by failures of the social system (injustices, exclusion tendencies, etc)[3].

Macro (contextual) aspects

3. An additional, largely institutional question also emerges: **how redistributive preferences of the electorate are transformed into policy when actual decisions on public expenditure preferences are formed**? This clearly depends on a large number of very important factors from political communication through electoral systems, welfare regimes, etc. These issues, however, are just mentioned here as the ones for which the control in a public opinion poll context is the least possible.

3.1. As the final decision on redistributive preferences of a political community are decided upon via elections, macro outcomes will largely depend, for example, on differential political participation of the affluent and of the poorer segments of the society (Bénabou, 2000) and they may lead to less (or more) redistribution than the one would be predicted by the MR model. Also, most recently, Larcinese (2007) argues that the turnout plays a major role in defining electoral outcome and, via that, public spending priorities (see also Lupu and Pontusson 2010, Mahler, 2006, Mahler et al, 2010). Studies on higher education finance, also show that adverse redistribution (from the poor to the rich) might easily be a result of the democratic game under the terms of higher political participation of the affluent and large segments of the low educated among the electorate. We call this **„political composition effect"**, but in the current version of our analysis we are not able to test this aspect.

3 A very important point made by Alesina and Giuliano (2009) is that respondents may sometimes have conflicting interests and trade-offs between these motives for preferences. We know very few on the dynamics of these, however.

3.2. European societies have many common features deeply rooted in history and social structures. This becomes evident when comparisons are extended outside Europe. Transatlantic differences in inequality attitudes are, for example, emphasized by Alesina, Di Tella and MacCulloch (2004) who found that the happiness of Europeans is reduced by perceived inequalities, while for the US respondents it matters much less, and even the relationship between happiness and inequality is insignificant. As they emphasize, this is not undifferentiated across various social groups: while in America the happiness of all four segments they analyse (poor-rich and left-right) seems unaffected by inequalities, in Europe the poor and the leftist (by ideological inclination) show strong aversions to inequality. In addition, they conclude, this transatlantic difference does not originate from different preferences of Europeans and Americans, but, rather, from differential perceptions of opportunities for mobility in the US and in European welfare states. Osberg and Smeeding (2006), however, argue that while transatlantic differences exist, they are rooted in the differential attitudes towards the unfortunate at the bottom end that make a difference, rather than the evaluations of income differentials as such.

However, there also are many contextual differences that shape the attitude climate of redistribution for the various countries or country groupings within Europe[4]. The European Union, which is fully covered by the international attitude datasets we use, includes countries with a long history of democratic governments, together with those that have experienced major economic, political and societal changes in the past decades or so. Also, various regions of the European Union have different cultural attitudes towards inequalities which might be reflected in cross country differences between – say – Continental European countries and those in the Mediterranean tier, between those with more liberal welfare regimes of the Anglo-Saxon countries and the Nordic welfare regimes. We list these as **„institutional/contextual effects"**[5] but we do not cover this issue in detail in the analysis.

To get closer to an answer on our ultimate question (do people living in countries with higher actual inequalities demand larger level of redistribution than those living in less equal countries?) we need a better definition of both "inequality" and of "redistribution". We come back to this in the next section.

4 But also, subjective, non-economic cleavages and socio-political contexts produce significant cross country variance in an also heavily redistribution-favouring region (Latin America, see Ardanaz, 2009).

5 We need to make it clear that our analysis stops at preferences for redistribution (opinions about smaller or lager state interventions). This does not have direct consequence on the actually operating redistributive policies. The size and incidence of the welfare state depends on many different parameters of the public decision mechanisms (i.e. on the political system as a whole). We do not analyse party systems, the formation of spending priorities, neither we deal with efficiency and efficacy of public spending programs.

3. Operationalisation, data, definitions

The datasets we use come from various large international data exercises. For the attitudes, we base our analysis on Eurobarometer (EB), a survey which periodically monitors the people's attitudes towards various social issues and also towards inequalities. The more than 35 years old EB has standard surveys on opinions about EU institutions and EU policies, but also on various social and economic issues. In addition, Special EB's are devoted to special topics. We, in our analysis, use the 2009 special EB survey on poverty and social exclusion (EB: 72.1), which has contained a battery of questions on redistributive attitudes, inequality perceptions, evaluations of social policies and poverty alleviation instruments applied in the member states[6]. This makes it possible to analyse attitudes of various social groups in various EU countries towards perceived inequalities and towards redistribution. For country level contextual information (level of actual income inequalities and of poverty rates), we use data from the Luxemburg Income Study (LIS). (For more on the surveys used, see Annex 1.)

Clearly, for most of the concepts it is only second best proxies that can be used as no such single survey exist that would cover all or most theoretically sound question formulations in the same design. However, the Special EB, which has the unbeatable advantage of the harmonized EU27 coverage, contains sufficiently large number of variables, from which we can gain a fairly comprehensive picture on how European citizens think about the actual and tolerated levels of inequalities, in addition to their redistributive preferences.

3.1. The empirical model used in the analysis

After a first general presentation of RPI country averages and their relationship with country level inequalities (in Section IV) we make an attempt to explain the differences in RPI using multivariate statistical models, and we will address three questions (in Section V):

- Q1: On micro (individual) level, what socio-economic characteristics, perceptions, motivational aspects and other attitudes drive (or: are associated with) the formation of redistributive preferences?
- Q2: How do various contextual factors (most importantly: aggregate income inequalities) shape redistributive preferences?
- Q3: What effect the structure of inequality has on the attitudes of the middle income classes?

6 In an earlier paper we analysed inequality attitudes in detail in a research note within the frame of the Social Situation Observatory, a regular monitoring exercise of income and living conditions in EU countries (see Medgyesi, Keller and Tóth, 2009).

We want to predict redistributive preference (RPI) by individual attributes (X_{ij}) and by contextual variables (Z_{ij}), where $i=1,2,...n$ is the number of individuals in the analysis and $j=1,2,...p$ is the number of Level 2 units (countries) into which all Level 1 units are nested. The general structure of the analysis is summarized in equation (1).

$$RPI = a + bX_{ij} + c_0Z_j + U_{0j} + E_{ij} \quad (1)$$

where a denotes the intercept, b and c denote coefficients at individual and country level, respectively, E_{ij} is for individual level residuals (varying over Level 1 units, reflecting the unexplained variance between individuals) and U_{0j} is the Level 2 residual (reflecting the unexplained variance between countries).

To answer Q1 (i.e. about the effects of individual attributes on RPI), we predict a simple OLS regression. Since we assumed that observations within countries are correlated in some unknown way, we clustered the standard errors according countries in all our OLS estimations. The equation we used is the following:

$$RPI = a + bX_{ij} + E_{ij} \quad (2)$$

for a country j (where i goes for the sample size of the given country). In these equations the vector X is filled by variables specified in Table 2 (the analysis is presented in Section V.1.). To answer Q2 (about the connection between RPI and various country level inequality measures, represented by the term c_0Z_j), we make an attempt in Section V.2. Finally, Section V.3. will be devoted to the specific problem of the effect of the structure of inequalities on the attitudes of the middle income groups.

3.2. The dependent variable: redistribution

Redistribution can take many forms and direct transfers from the rich to the poor constitute only a fragment of the total (welfare) state intervention. Governments provide various in kind benefits (education, health), lifetime consumption smoothing mechanisms (pensions), insurance against various risks (sickness, unemployment, etc) and many other forms. When "redistribution" is mentioned (and measured by, say, share of public expenditures in GDP), it always the whole complex of the above that is meant (in addition to various other non-welfare expenditures like agricultural subsidies, costs of various protectionist measures, etc.) This makes it advisable, therefore, to use a definition that goes beyond the conventional "from-rich-to-poor" notion. Therefore, we try to work out (within the limits of data availability) a more complex definition also for our analysis.

To capture a broader notion of redistribution, we combine five questions about state, market and redistribution into a Redistributive Preference Index (RPI). The first is a general (conventionally used) question about the desirability of vertical redistribution in the country of the respondents.

> *EB 72.1. Q14 Please tell me whether you agree to the statement that government should ensure that the wealth of the country is redistributed in a fair way to all citizens. Respondents had five options to say that they „totally agree", „tend to agree", „tend to disagree" or totally disagree", with the fifth option reserved for those unable to decide.*

Four questions in the EB are asked respondents to reveal their agreement with normative judgements on the potential desirability of state involvement in providing jobs for the citizens, education finance and social expenditures. We also included a question on general attitude about the role of the state to provide for citizens versus the citizens responsibility in the formation of their fates. The actual wordings were as follows:

> *EB72.1. Q25: People think differently on what steps should be taken to help solving social and economic problems in (OUR COUNTRY). I'm going to read you two contradictory statements on this topic. Please tell me which one comes closest to your view.*
>
> *Qa25_a: 1: It is primarily up to the (NATIONALITY) Government to provide jobs for the unemployed or 2: Providing jobs should rest primarily on private companies and markets in general or 3: It depends*
>
> *Qa25_b: 1: Education should be totally free, even if this means that the quality might be lower or 2: Tuition fees are necessary for providing high quality education, even if this means that some people won't be able to afford it or 3: It depends*
>
> *Qa25_c: 1: Higher level of health care, education and social spending must be guaranteed, even if it means that taxes might increase or 2: Taxes should be decreased even if it means a general lower level of health care, education and social spending or 3: It depends*
>
> *Qa25_d: 1: The (NATIONALITY) Government should take more responsibility to ensure that everyone is provided for or 2: People should take more responsibility to provide for themselves or 3: It depends*

The basic distributions of the above variables are shown in Annex 2. of this paper.

The definition of the dependent variable. After applying a principal component analysis (PCA) for the five basic variables listed above, we nominate the first principal component as ***redistributive preference index*** **(RPI)**, which is going to serve as dependent variable in our analysis[7]. The correlations of RPI with the component variables are shown in Table 1. The variance explained is about one third of the total variance of the five elementary variables, which could in principle be improved (to around forty percent of the – then – four included variables)

7 To avoid confusion, we speak of "redistributive preference" when people „totally agree" to the statement that "governments should reduce inequalities in their countries.

if we exclude the variable on preferences for social expenditures with price tags applied. However, our concept is that we try to measure an overall index of redistributive preference as it occurs in the „real" world (including taste for vertical redistribution, provision of various in kind services, public provision for education and labour market measures, etc[8]. The strongest correlate (with RPI) is the question on the general requirement that the state has a duty to provide for its citizens to a maximum extent (r=0.74).

Table 1 Dependent variable (main statistics of the principal component "redistributive preference")

	Correlation with the redistribution preference principal component
Qa14_3 ("government should redistribute")	0,59
Qa25_a ("providing jobs for the citizens")	0,65
Qa25_b ("education finance")	0,53
Qa25_c ("social expenditures")	0,12
Qa25_d "(everyone is provided for")	0,74
Eigenvalue	1,62
Cumulative Sums of Squared Loadings	32,47%

3.3. Explanatory variables

Reflecting the theoretical considerations set out in Section 2, applying a multilevel model structure seems appropriate[9]. We, therefore, differentiate between level 1 (individuals) and level 2 (countries) units of analysis, where individuals are nested into country level samples. Level 1 variables (individual attributes) are the ones listed in Table 2 and country level variables are listed in Table 3.

Micro (level 1) variables

The available variable structure of the EB72.1. makes it possible to reflect some (though, unfortunately, not all) aspects of the potential individual level determinants of redistributive preference.

The **basic socio-demographic variables** (age, education, gender, settlement, household size) are self-explanatory. We use all these as controls to back the analysis of the effects of the other factor groupings.[10]

8 This is a difficult trade-off, though. It is clear to us that this way of calculating RPI mixes up various policy measures which might have very different distributional implications and, therefore, the individual elements may attract the attention of very different social groups. However, in the first instance, our target variable is an overall demand for state redistribution and this encapsulates all sorts of elements in actual politics as well. Should the issue be an attempt for reforms, where politicians start communicating packages with trade-offs between the various expenditure items, a more refined categorization might obviously warranted.

9 Snijders and Bosker 1999, Snijders 2003. Notations here follow those suggested by Snijders 2003.

10 In EB, unlike in many other opinion surveys, the bottom age limit is set at 15. This clearly causes problems for interpretation. However, we excluded those in the age between 15 and 18. we limited the problem but does not solved it.

The **material status index** is created from four different elementary questions (qa44, qa43, qa42, and qa35). The base is a general ten-point scale self evaluation of the (material) situation of the household (qa44). We re-grouped this ten-point scale into a six point-scale by merging together the first three categories and (separately) the last three. Then we corrected this regrouped six point scale variable with the help of some other available variables. There was a question about the respondents' assessment of the lowest net monthly income that a particular household would need in order to have a minimum acceptable standard of living (qa42). If somebody answered that their household has "much higher" income (qa43) than 2000 Euro/months (qa42) we coded the maximum value of the material status index (6). On the other hand if someone perceives that his or her household has "much lower" income (qa43) than 500 Euro/month (qa42) we coded the minimum value of the material status index (1). For the correction procedure we also used the variable qa35 where we asked the ability to „make ends meet". If someone declared that it is "very easy" to make ends meet, we coded highest value on the six-point scale, while all respondents choosing the answer category "with great difficulty" were coded with the lowest value.

The question arises: will the use of subjective self evaluation (rather than measured income position) cause problems for interpretation? To make it clear: we have no other option as there are no „objective" incomes in the EB72.1. file. However, we would not even agree that subjective variables are inappropriate here. The line of reasoning is as follows: given that people voting at a ballot most likely do not have a perfect assessment on the shape of the „real" income distribution, neither on their own rank within it, they need to rely on their subjective assessments in any case. While the precision of their estimate is most likely questionable, this holds for both the opinion poll and for the election context. Therefore, using this subjective measure as a basis for their material position do not seem to be a very large sacrifice in the micro analysis. When it is (in parts of Section V devoted to effects of social distances and contextual effects), we give it a special treatment.[11]

There is also a potential problem with the **„expectations"** variable. As no proper question wording was available in EB72.1. for subjective mobility, the „12 month expectations for the situation to get better, same or worse" (qa38) is clearly a second best option to measure POUM. The most problematic element here is the lack of relative comparisons. When people express their positive expectations for their living standards to improve, they do not necessarily mean improvements in terms of social mobility. However, we shall have to work with this second best proxy and come back to the issue at the interpretations.

11 The relationship between subjectively defined material status on the one hand and the RPI on the other hand might transmit influences in both ways. The main assumption of the "material self interest" argument is that people with lower level of economic resources will demand higher level of redistribution. But, however, what if a general attitude towards larger state involvement will drive people saying they are in worse economic conditions than they actually are? In this case the causality goes on the other way round. Besides registering this type of endogeneity problem, we cannot offer really good treatment to this in the context of the current paper, but in section 4, we further investigate the problem.

Failure attribution in terms of poverty is based on a question about why are there people who live in poverty? The choice of one of the four options (they are unlucky, lazy and lack willpower, there is much injustice in the society) provided a hint on the respondents' opinion on what they think poverty can be attributed to. Also, a question on how respondents evaluate poverty (do they think believe the assertion that poverty is an "inevitable part of progress") was to used here.

Within the **social context/values** bracket we have, for each and every respondent, their general subjective evaluations of the circumstances in their countries. The evaluation of the general level of inequalities in their countries (qa4) is the first. For all thinking poverty is "very widespread", this variable takes the value of 1, and 0 otherwise. In addition, the „a lot of" evaluations of "how much tension is there between rich/poor, manager/worker, young/old and different racial and ethnic groups" (questions from qa15_1 to qa15_4) contrasted to all other answer options is taken as a sign of frustration with the various aspects of the surrounding social environments. Note that these are not contextual variables per se but they are individual attributes representing attitudes/evaluations of individuals about the social context.

Finally, **inequality sensitivity** is added. This binary coded variable has the value of 1, if someone "totally agreed" the question that "income differences between people are far too large", and the value is zero otherwise (qa14_2) [12]. We always put this variable to be the last in the sequence of our models. The reason is that we are hesitant to believe that it is independent of the redistributive preference. It might well be that these two variables are strongly intercorrelated: partly because inequality has its own effect on personal well-being (Clark et al, 2007, Senik, 2005, 2009) and partly because in evaluation of income distribution there is always a relative (comparison) element that can directly related to redistributive claims (Senik, 2006, Tóth, 2006)

12 The wording of this question is as follows: Please tell me if you totally agree, tend to agree, tend to disagree or totally disagree to the statement that "Nowadays in (OUR COUNTRY) income differences between people are far too large"

*Table 2. Independent variables used in the analysis**

Number of the model	Name of the explanatory mechanism	Definition
I.	Basic model	Country dummies (reference: Germany)
II.	Demography	Gender (male=1) Variable d10.
		Age (18-30, 31-40, [41-50], 51-60, 61-70 and 70+)Variable vd11.
		School (less than primary, primary, [secondary], higher, no education). Variable d8
		Settlement (village, [small town], large town) Variable d25
		Household size. The sum of the variables vd40a+vd40b+vd40c
III.	Material self interest	Material status index (continuous, see the construction above)
		Labour market position (self employed, [employed], not working). Variable c14.
IV.	Expectations	Future expectations (better, [same], worse) Question used: "What are your expectations for the next twelve months: will the next twelve months be ... when it comes to the financial situation of your household?" (qa38) Three binary coded variable
V.	Failure attribution	Poverty attribution ([unluck], lazy, injustice, progress) Question used "Why in your opinion are there people who live in poverty? Here are four opinions: which is closest to yours?" (qa8) Four binary coded variables.
VI.	Social context/values	Poverty perception: Binary coded variable: 1, if someone perceive that poverty is "very widespread" in the country (qa4), the value is zero otherwise
		Perception of conflicts between poor-rich, young-old, managers-workers and between ethnic groups. Questions from qa15_1 to qa15_4, binary coded variables
VII.	Inequality sensitivity	Binary coded variable: 1, if someone "totally agreed" the question that "income differences between people are far too large" (qa14_2), and the value is zero otherwise

Note: for the regression analysis: categories in square brackets are omitted

Contextual variables: inequality measures

We cannot deal here with the many reasons why ***perceived levels of inequalities*** (i.e. perceptions of the respondents about the gap between various social strata) might differ from the ***actual levels of inequalities*** (as measured by income surveys or tax records). However, it is important to find out ***what measures of (objective) inequality*** measures correlate the most to the various aggregate perceptional measures. In one of our earlier papers (Medgyesi et al, 2009) we found that special aspects of the income distribution (that is, for example, the relative poverty rate) seem to show higher influence on inequality perceptions as opposed to general, overall aggregate measures (like Gini, for example). We assumed that this might be casued by cognitive factors (the ability of respondents to perceive inequalities in terms of simple social distances, rather than calculating complicated welfare and inequality indices. Therefore, we decided to use distance-based rather than variance based inequality measures to capture actual, "objective" inequalities in a society (we kept the Gini measure though, mostly because of its general popularity in the literature). From the various available options we decided to pick the 5th and the 95th percentile cutpoints and the median value of the distribution as three dedicated benchmark positions, P95/P5 representing overall inequality level, P50/P5 representing the distance between the middle and the poor while P95/P50 denoting the distance between the rich and the middle[13]. Also, as an overall measure of inequality, we use the ratio of the latter two measures (all calculated from the Luxemburg Income Study (LIS) database), We expect this approach more appropriate for the test of the MR predictions as well, as inequalities in MR are also defined in terms of a distance (between average and median) in the distribution[14].

In a second set of our models, therefore, we investigate how country level objective inequalities (measured by distances) influence people's RPI (i.e. to what extent will some of these inherently contextual variables account for between country differences, after controlling for all sorts of micro drivers of attitude differences). We substituted the country dummies in our full model (Model VI.) with various kinds of distance based inequality measures (some of them being sensitive to the upper and some of them to the lower tails of the income distribution) . The list of the contextual variables is given in Table 3.[15]

13 In terms of measurement, Lancee and Werfhorst (2010) also underline the need for reflecting the structure of the distribution when analysing the consequences of inequality (in their case on trust relationships). The measure they suggest calculates the mean distance from the median income (MDMI). For our purpose, however, as it combines distance and variance and does not simply measure the distance of the median from the extremes, it seems too complex. We also checked various other inequality measures like P90/P10, P90/P50, P50/P10, but finally we preferred using the ones providing a larger variance, and a higher covariance with RPI. The measures we used would certainly be more risky to be used for measuring income distribution differences, but for the current purpose (i.e. to serve as right hand variables) this risk does not exist.

14 A similar approach has been put forward by Lupu and Pontusson (2010). They argue that for the formulation process of redistributive preferences, much depends on the distances between the middle class and of the upper and lower tails of the distribution. Once the distance between the median and the lower half of income distribution is small, middle class people feel more affinity to the poor, and vote for more redistribution (as opposed to the rich). In the contrary, if the distance between the middle class and the upper half of the income distribution is small, middle class people join to the rich, and vote for less redistribution (contra the poor). We turn back to this in section V of our paper.

15 Note, that since every inequality measure comes from the LIS database, the numbers of countries included in this part of the analysis are smaller, and only 17 countries from the EU27 were investigated.

Table 3. The type of contextual variables used in the analysis

	Contextual variable	Definition	Number of countries
Model VI_A.	P95/P5	The income of the person at the 95th percentile of the income distribution divided with the income of the person at the 5th percentile	17
Model VI_B.	P95/P50	The income of the person in the 95th percentile of the income distribution divided with the income of the median income person	17
Model VI_C.	P50/P5	The income of the median income person in the income distribution divided with the income of the person at the 5th percentile	17
Model VI_D.	Gini	Gini coefficient	17

17 LIS countries are included.
Countries from LIS wave VI: AT, DE, DK, ES, FI, GR, HU, IT LV, PL, SE, UK
Countries from LIS wave V: BE, EE, IE, NL, SI

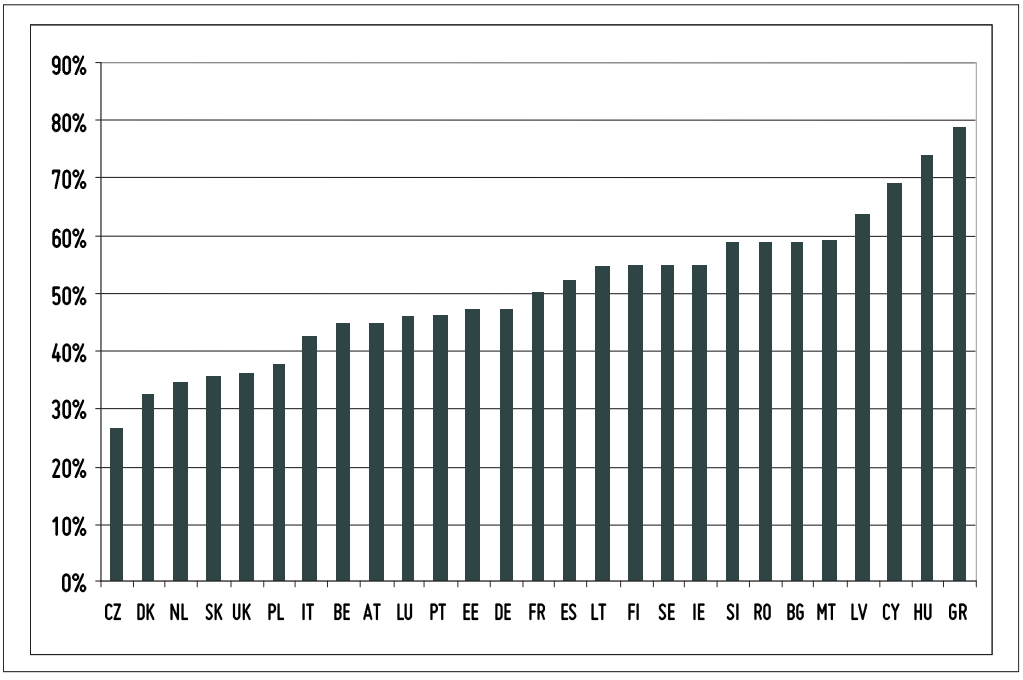
On macro (contextual) level, there might be a reverse causality between (average) propensity to redistribute on the one hand and the overall level of (post redistribution) inequalities. In this respect the reverse causality works in a "historical" perspective: long term redistributive appetite (socialization) in a country might lead to higher level of redistribution, resulting lower level of inequalities. We turn back to this issue in Section 5.

4. Inequalities, their perceptions and redistributive attitudes across countries (country level aggregates)

Country level descriptions

In an earlier paper (Medgyesi et al, 2009), based on the same EB survey we found that that preference for (vertical) redistribution (the share of those in full agreements to the call for the necessity of redistributing from the rich to the poor) is strongest in some Eastern European countries, including Hungary and Latvia, while in some other former transition countries (like Czech Republic and Slovakia) this share shows among the lowest in Europe. The share of those calling for government intervention exceeds 70% in Greece and in Hungary, while it is around only 30 % in Czech Republic and Denmark (Figure 2).

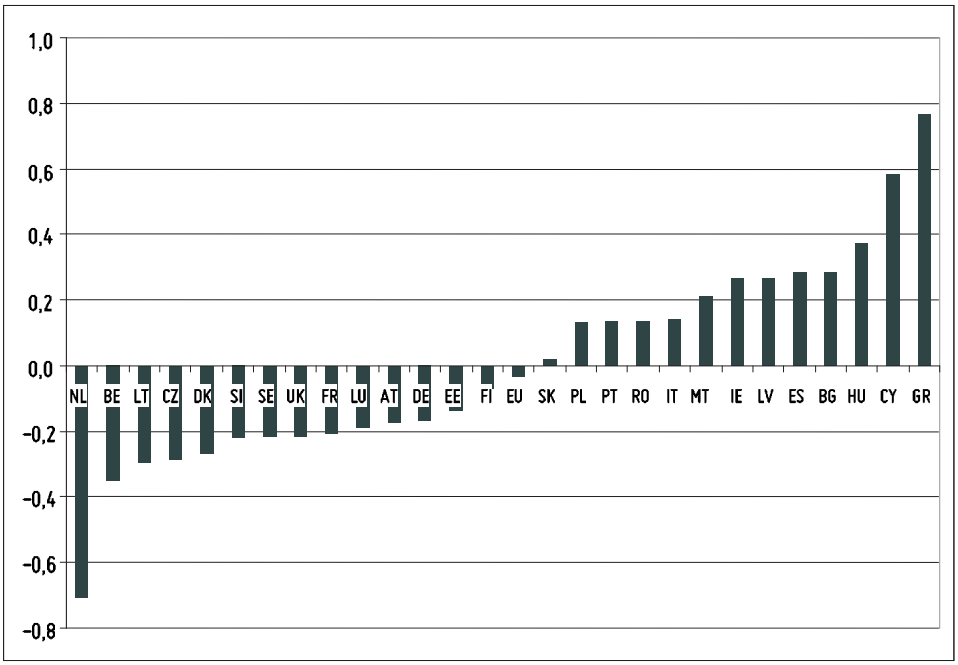
Figure 2. Preference for redistribution (share of population agreeing "Government should reduce differences in income levels"



Note: the share of population who "totally agree" with the statement: "Government should ensure that the wealth of country is redistributed in a fair way". Source: Medgyesi et al 2009, based on data from: Special 72.1. Eurobarometer on poverty and social exclusion, 2009. Variable: QA14_3

The country level averages of the (composite) RPI (as a dependent variable for the present analysis) also has a significant cross country variance (Figure 3). Its overall values are highest in Greece, Cyprus and Hungary, followed by a country grouping of Bulgaria, Spain, Latvia and Ireland. The lowest RPI value is found in the Netherlands[16], followed by Belgium, Czech Republic and Denmark – countries with relatively extensive welfare states - together with Lithuania.

Figure 3 Values of the dependent variable (RPI) for EU countries (PCA load scores)



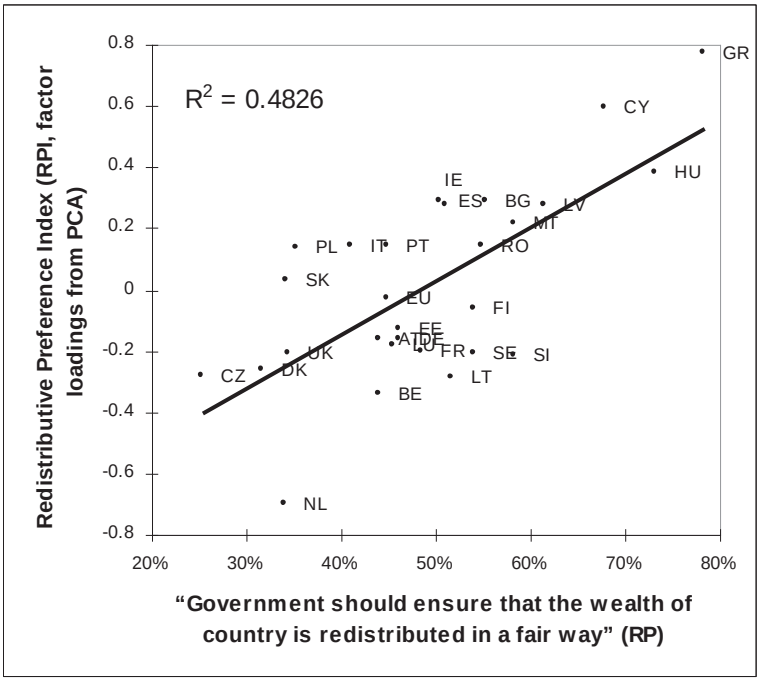
Source of data: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation

The relationship between RPI and the demand that "government should reduce inequalities" is shown in Figure 4. Except for the outlier-suspicious Dutch case, the rest of the countries are positioned within a reasonable range around the regression line for the two variables (RPI including the pure "redistribute more!" statement as one element in the total five). The Czech Republic, Denmark, UK and the Netherlands all show below average (popular) redistributive preferences both for the simple demand for vertical redistribution and for RPI, while Greece, Hungary and Cyprus show above average values on both dimensions. Among the rest, we cannot find very much inconsistent values on the two dimensions[17].

16 When analysing relative role of its components, it turns out that this comes from the very low level of agreement of the Dutch to the statement that „*Government should take more responsibility to ensure that everyone is provided for"* (see Annex2 for the basic distributions). Taking this variable out would decrease the level of the Dutch „anti-redistributive" feelings but otherwise it would not fundamentally change the country rank orders in general. We leave it in for this analysis but make a note that next version of the paper need to deal with potential explanatory factors (technical error or a specific policy issue in the Netherlands) to this phenomenon.

17 The very low RPI level for the Netherlands comes mostly from a low approval of the statement that the state should provide more for the individuals (see Annex Table A2.5. for frequencies)

Figure 4. The relationship between the demand that "government should reduce inequalities" and redistributive preference index (RPI, factor loadings from PCA)



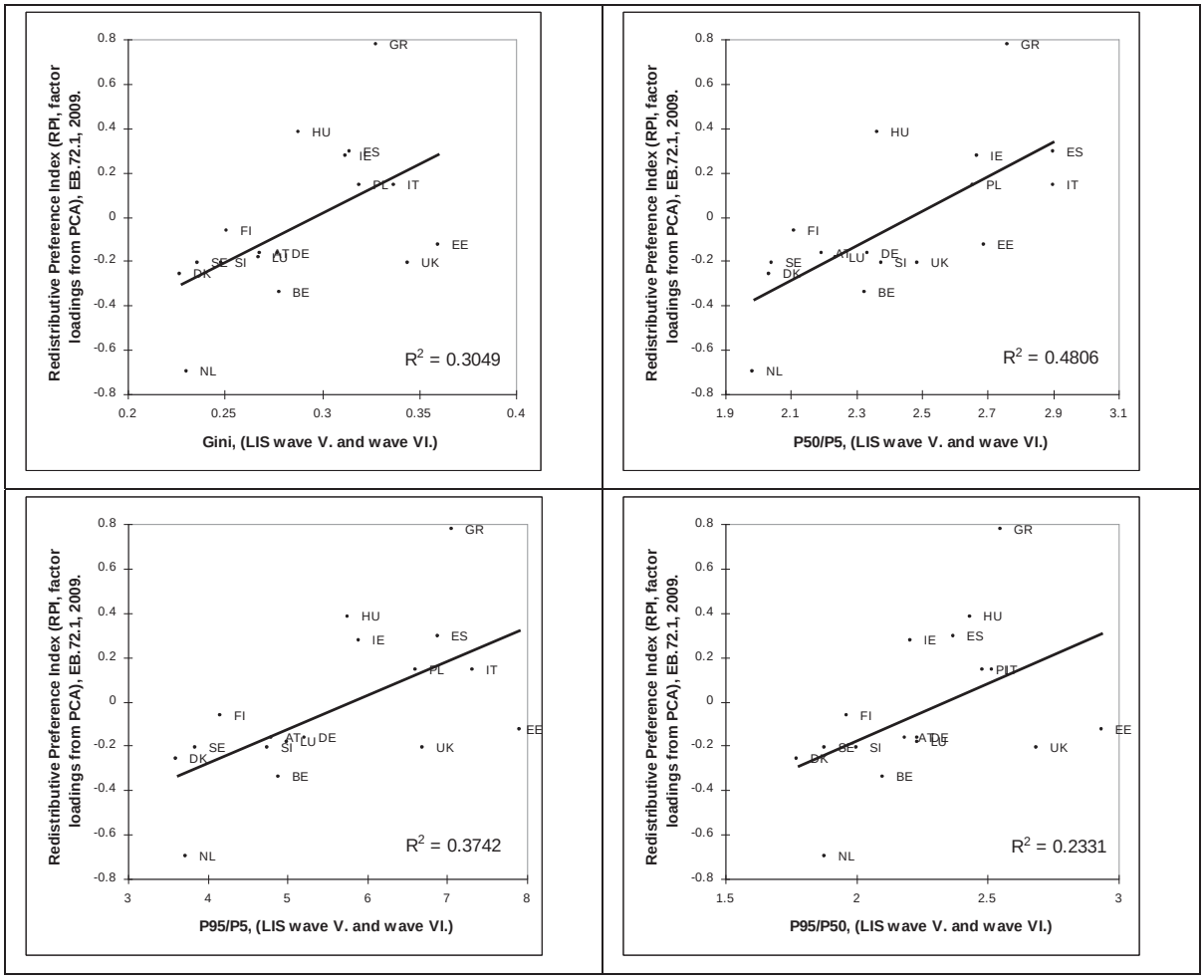
Source of data: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation

Inequality and general redistributive climate (average redistributive preference)

The correlation between RPI and measured inequality (whether it is measured by Gini or by the overall P95/P5 ratio)[18] is relatively sizeable (Figure 5). Higher level of inequalities correspond to higher redistributive preference indices, the two extreme values being Greece (high inequality AND high RPI) and the Netherlands (low inequality AND low RPI). The fit of the regression for P95/P5 on RPI (country averages) is somewhat larger than that of Gini on RPI, a feature probably due to the fact that while Gini as measure is very much balanced and symmetrical, the other inequality measure is more sensitive to alterations in the skew and to changes at the two tails of the distribution.

18 Based on data from LIS waves V and VI (whichever is more recent for the various European countries for which we have attitude data)

Figure 5. Inequality and redistributive preference index (RPI) in European countries (LIS Wave V and Wave VI, the most recent available)



Source of data:
Y axis: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation
X axis LIS, Countries from LIS wave VI: AT, DE, DK, ES, FI, GR, HU, IT LV, PL, SE, UK; Countries from LIS wave V: BE, EE, IE, NL, SI, , own calculation

In substantive terms, the results show that societies where the income distance between the poorest and the middle is the largest, produce the largest level of aggregate demand for redistribution as well[19]. On the other hand it is also interesting that the ratio which compares the richest to the middle (P95/P50) has only half as large influence on the RPI than the P50/P5 ratio. It means that **preference towards redistribution is more influenced by the lower part (below median) of the income distribution, than by the upper part (above the mean)**. These results are different from the hypothesized connection between redistribution preference and the two part of the income distribution (Lupu and Pontusson, 2010: 8). They hypothesised that a secular increase of P90/P50 ratio will be associated to more redistribution and an independent P50/P10 increase with less redistribution.

19 The image of this bivariate presentation changes somewhat if we take our one or two outlyers. A sort of a curvilinear pattern would appear, for example, shall we take Hungary and/or Greece out from the presentation. The curvilinear relationship between RPI and some inequality measures was not supported introducing the squared component in a regression, but it is graphically revealed with "lowess smoothing" estimation (see: Annex 4.).

Direction of causality: will preferences drive inequalities or vice versa? (potential endogeneity problems)

Visible correlation between country level inequalities and country level aggregate redistributive preferences will not, of course, mean that the former "causes" the latter, as causality may run both directions. People in high inequality countries may demand social policy measures but, in the other direction, it also may happen that long term egalitarian attitudes in a country shape the general patterns of the distribution of income. Shall, for example, general and long-standing pro-redistribution attitudes in a country provide a supportive climate for politicians offering extensive social policy to the electorate, objective income differences on the long run will be lower than in countries with less egalitarian attitudes. To sort out the direction of causality is a very difficult thing and we can just mention here some of our experiments, without offering any definite arguments.

We probed a few suggestions offered by the literature (see Wooldridge: 2009, for example), but found no conclusive results. Our search for a good instrument (correlating with inequality but uncorrelated with RPI) was unsuccessful[20] and a real panel data to capture time change of the two observed variables so that full longitudinal spell - analysis is unavailable[21].

One potentially good way of sorting out the actual relevance of reverse causality problem here could have been to find a sufficiently good covariate that captures somehow the reverse impact (from the preferences to the inequalities). Shall we have it, we can argue that we measure the pure impact of inequality on the preferences. We experimented with two potential candidates for this. The first is the total social protection expenditures (SOCEXP, measured in % of GDP), which can be understood as a product of past (historic) welfare policy in a given country. Shall SOCEXP be a good aggregate measure of past redistributive preferences, there should be a positive empirical relationship between SOCEXP and RPI (higher preferences mean higher redistribution). This is however not the case, as the correlation between SOCEXP (averaged for 1990-2008) and RPI (-045, p=0.07), so we cannot go further this way either[22]. Applying, however, the same logic, we used a welfare regime typology (five dummy variables[23]), assuming that institutionalised welfare regimes are also a product of historic popular preferences expressed via elections. When controlling for the welfare regimes, in turn, country level objective income inequality

20 Running regressions with a good instrumental variable - which correlates with inequality but which is uncorrelated with RPI - on which the chosen inequality measure could be regressed and then using the predicted value to sort out reverse causality directions could be helpful. However, as we did not find such an instrument, we could not employ the appropriate method (two staged least square estimations).

21 A good panel data would be necessary to carry our a "difference in difference" estimation. To probe this we had to use other datasets (needed to substitute RPI with the percentage of those who "totally agreed" the question, that "government should reduce differences in income levels" coming from the European Social Survey (ESS) round 3 (2006) and round 4 (2008) and collected time period S80/S20 data from published Eurostat EU-SILC indicators). However, the noise due to this data seemed to be too large at the first glance so we discontinued this experiment.

22 However we have to emphasise that while the connection between SOCEXP 2008 and RPI is not significant (r=-0.24; p=0.35), averaging SOCEXP in a larger time period would result statistically significant coefficients. (Averaging SOCEXP between 1997 and 2008 would result -0.42 correlation coefficient with RPI (p=0.1)). We conclude the reverse causality might be a problem.

23 These variables correspond to the conventional classification originated from Esping-Andersens' seminal work (Esping-Andersen, 1990) on the three worlds of welfare capitalism, but, we combine a territorial division with the original typology, adding the post-transition countries m(CEE and Baltics as well), but also the countries from the Mediterranean tier (see Ferrara (1996), Bonoli (1997), Boeri (2002) more on these typologies). Anglo-Saxon: UK, IE; East European (ex-communist): EE, HU, PL, SI; Continental: AT, DE, NL, BE, LU; Mediterranean: ES, IT, GR,; Scandinavian: DK, FI, SE. Reference: Continental

lost its significance in the prediction of RPI. This estimation is also far from being perfect, however, as there might be serious multicollinearity between the welfare regimes and the overall inequality levels.

To conclude: we think that the problem of reverse causality is not negligible and deserves further research attempts. However, in the forthcoming parts of the analysis we assume that causality in general goes from inequality to preferences and not on the other way round.

5. Accounting for micro and macro determinants of redistributive preference

As specified in Section III, we predict RPI assuming that there are micro (individual) and macro (contextual) determinants as well. To account for this, we apply a multivariate model, the general structure of which was described in Section III.

5.1. Micro correlates of redistributive preference

To test the effects of socio-economic factors, we build simple pooled OLS regressions (in the sample of all the available EU member states, with country dummies introduced to control possible country specific fixed effects). OLS unstandardized parameter estimates (B coefficients) for the pooled sample are shown in Table 4. with an indication of how estimates change when new variables of the consecutive models step in. The first (with country dummies) and the second (with the socio-demographic variables) models serve to identify cross country differences and control for various basic characteristics. From Model III to Model VII, additional groups of variables (of material self interest, for subjective expectations, for failure attribution attitudes and general social/cultural attitudes, and inequality aversion) step in, respectively. The results are as follows[24].

In general, the performance of the **basic model** (Model I, with the country dummies and no other variables in the model) is not very strong: the explained variance amounts to 7 percent only. The explained variance significantly increases with the introduction of the subsequent models: in the "full" Model VI, the R^2 is reaches 21 percent, which is, for a model with attitude variables looks remarkable.

From the observation of the subsequent introduction of the various block of variables, we may conclude the followings:

- From among the **demography variables** there are significant gender differences in redistributive attitudes: **males are much less pro-redistribution** than females. The age variable is rarely significant - which is an interesting phenomenon. To explain, it should be taken into account that that elements of RPI include jobs provisions, higher education involvement, health care and social spending, but no mention is made to pensions. Also, while age 61+ category contains – depending on retirement age provisions in the given countries – a different mix of the employed and the not working by country, the youngest age cohort is also very heterogeneous by the same categories, depending on the phase of the education expansion process. By education attainment,

24 We checked for multicollinearity but VIF is always under the critical value, even in Model VII.

higher educated are less in favour of redistribution, while for the lower educated the parameter estimates are positive (and significant for the primary educated). There are no significant differences between villagers and large town citizens (in pairwise comparisons to those living in cities) Household size cannot be treated as a significant factor in this specification either.

- The introduction of **material self interest variables** brings a moderate increase of the explained variance (from 9 to 12 percent). Self employed have less, those not working have more taste for redistribution than the reference category of the employed people. People with material resources (self evaluated to be) at low levels have a significantly larger appetite for redistribution as compared to those in the middle and people towards the higher end have much lower support for redistributive arrangements.
- The introduction of **subjective expectations** brings a slight decline in the parameter estimates of the material positions' effects and show the expected signs: **those expecting a worsening position will have a significant positive evaluation of redistribution.** The difference of attitudes of those evaluating their one year prospects positively from those who do not expect any change is not significant, but the sign of the parameter is in the expected (negative) direction.
- The introduction of the failure **attribution arguments** brings an additional 4.3 percentage point increase in the explained variance (actually this is some fourty percent larger R^2 than it was in the previous model). **People believing that the poor get into poverty because of laziness have a much smaller redistributive taste** (even when compared to those who evaluate poverty to be a result of bad luck) while those who think poverty is a consequence injustice in the society have a much larger redistributive preference index.
- The variables reflecting the general evaluation of the **social context** bring another large increase in the explained variance. People evaluating poverty a problem in the country and/or those who think there are large tensions between the rich and the poor and between the managers and the workers or are more pro-redistributive than others. As far as the perceived ethnic tensions are concerned, our OLS estimates did not show up with a significant result[25].

25 Starting from Alesina et al 2001, country level racial heterogeneity is increasingly offered to explain the cross-country (mostly between Europe and US) differences in size of redistribution and of welfare states, the causal link being attached to the popular belief of racial minorities benefiting from welfare expenditures (see also Lindqvist et al, 2009, Dahlberg et al, 2011, but also Mau, 2007). To proxy the perceived problems caused by ethnic heterogeneity, we aggregated a question: there is a „lot of tension" between „different racial and ethnic groups" (QA 15_4) to arrive at a country level variable. At this level we found a negative (but not significant) connection between RPI and ethnic tensions (r=–0.17, p=0.39). The direction of the correlation is however, in line with the predictions: the higher the perceived tension between ethnic groups is, the less redistribution will be desired. When, in addition to the set of other control variables (all as in Model VI) of our multivariate model we include the country level aggregated ethnic tension (B=–1.02; p=0.21), the sign of the individual level ethnic tension variable was negative (B=–0.38; p>0.001) and their interaction (B=1.05; p>0.001) was significant and positive, indicating that high level of perceived ethnic tensions will lead to decreased redistributive taste, with higher tensions predicting more widespread consensus on it. We leave, however, the analysis of this to our next paper.

- In our last (Model VII), we added the variable **"inequality sensitivity".** Those evaluating current income inequalities "too large" produce the highest of all coefficients: holding this opinion increases the chance of being pro-redistributive to a very large extent. Since the zero order correlation between our dependent variable (RPI) and "inequality sensitivity" is quite large (0.26), we do not draw serious conclusion from this result, but it is noteworthy that people with high inequality sensitivity have a stronger preference for redistribution, holding all other differences constant (and, potentially, vice versa.)

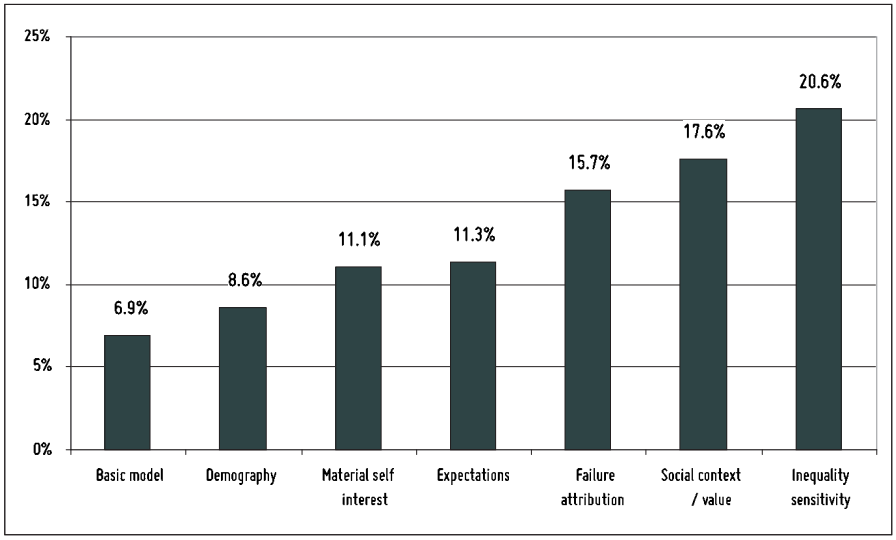
On Figure 6 the bars represent the explained variance attributed to all the explanatory variables included in the successive models. As one can see, country fix effects explain only some 7% from the total variance of RPI. The inclusion of demographic variables increases the explained variance by some 2 percentage points. The highest increase in the variance is due to the introduction of the failure attribution variables (some 4 percentage points). In other words controlling for all other differences between the respondents the set of failure attribution variables perform the best. Social context/value variables increase the variance with an additional 2 percentage points. There is a relatively high gain attributed to inequality sensitivity variable. But, as we have noted earlier, in that case the zero-order correlation was relatively high, and this is a hint for a tautological explanation.

Table 4 OLS estimates, dependent variable: demand for redistribution index (pooled regression for the complete EU)

	Model I.	Model II.	Model III.	Model IV.	Model V.	Model VI.	Model VII.
	Basic model	Demography	Material self interest	Expectations	Failure attribution	Social context / value	Inequality sensitivity
(Constant)	-0.17***	-0.1*	0.2**	0.12	-0.04	-0.21***	-0.42***
Gender: male		-0.13***	-0.09***	-0.08***	-0.07***	-0.06***	-0.05***
Age: 18-30		0.02	0.04	0.06*	0.06	0.05	0.05
Age: 31-40		0.05	0.04	0.05*	0.06**	0.06**	0.06*
Age: 51-60		0.06	0.06	0.06	0.05	0.05	0.04
Age: 61-70		-0.07	-0.07	-0.07	-0.05	-0.04	-0.05
Age: 71+		-0.06	-0.06	-0.06	-0.04	-0.02	-0.03
Educ: max primary		0.15***	0.09***	0.08***	0.09**	0.09***	0.08***
Educ: tertiary		-0.22***	-0.17***	-0.16***	-0.16***	-0.13***	-0.12***
Loc: village		-0.05	-0.03	-0.03	-0.02	-0.03	-0.04
Loc: lrg town		-0.02	-0.01	0	-0.01	-0.02	-0.02
Hsize		0	0.01	0.01	0.01	0.01	0.01
Labmark: selfemp			-0.19***	-0.18***	-0.18***	-0.17***	-0.16***
Labmark: notwork			0.12***	0.12***	0.12***	0.11***	0.1***
Labmark: retired			0.02	0.02	0.01	0	-0.01
Labmark: student			-0.08**	-0.07**	-0.07**	-0.03	-0.01
Mat. status			-0.1***	-0.08***	-0.07***	-0.06***	-0.05***
Exp: gets better				0.04	0.04	0.03	0
Exp:gets worse				0.24***	0.18***	0.13**	0.12**
Gets better × mat. status				-0.03*	-0.02	-0.02	-0.02
Gets worse × mat. status				-0.05*	-0.04	-0.03	-0.03
Whypoor: Lazy					-0.25***	-0.25***	-0.24***
Whypoor: injust					0.29***	0.27***	0.23***
Whypoor: progress					-0.07**	-0.07**	-0.07**
Around: lrg povty						0.22***	0.17***
Tension: richpoor						0.14***	0.11***
Tension: aged						0	0.01
Tension: man/work						0.1***	0.06*
Tension: ethnic						0.03	0.01
Ineq: too large							0.38***
Adjusted R2	6.92%	8.59%	11.11%	11.33%	15.74%	17.60%	20.61%
N	25988	25138	24570	23631	22116	22116	21899

Note: In each models we controlled for between country differences, since we used country dummies with the reference to Germany. Regression coefficients for country dummies are not included in this table.
Reference categories: Female, Age 41-50, Secondary school, Small town, Employed, Future expectation: the same, Poverty attribution: unluck.
*Coefficients with *** are different from zero at the significance-level of 0.01, coefficients with ** are different from zero at the significance-level of 0.05, coefficients with * are different from zero at the significance-level of 0.1.*
All models are significant at 0.001 level.
Standard errors are clustered by countries, robust standard error is used

Figure 6. Adjusted R square change attributed to different explanatory mechanisms



5.2. The impact of country level contextual variables on RPI and on its variance by material status

Having known that there is a cross country variance of intercepts (in previous OLS models: the country fix effects, see "Basic model"), we now test how country level inequalities might be accountable for at least some of this variance. We intend to investigate (1) whether inequality has an effect on RPI, and (2) whether the slope of RPI by material status differs in different inequality regimes.

In other words in this section we attempt a more thorough examination of the connection between RPI, various kinds of inequality measures and material status index. For the nature of these relationships, a look at "lowess" estimates (Annex 4)[26] reassures some previous findings and suggests new insights:

- Increasing country level inequalities translate to increasing RPI, but among countries with extreme high inequalities (depending on the inequality measure, but usually Estonia, Greece, Italy and UK) the sign of direction changes into negative[27].
- Rich respondents always have lower demand towards redistribution than their lower status fellow-citizens. The curves for higher status groups always run below the curves for lower status groups and the two curves never cross each other.

26 "Lowess" (locally weighted nonparametric regression) estimates of coefficients localize subsets in the data set and gradually develop a function which explains best the variation in the data points. We predict RPI with various inequality measures for breakdowns by the respondents' material status.

27 Most likely because of the small numbers of country with high inequalities, using a squared function instead of the linear do not fit the data better, since once we included the squared component in the equations, the estimated parameter to the inequality measure became insignificant (for the linear and for the squared component as well).

The impact of various inequality measures on RPI

First we include various kinds of (country level) inequality measures into the Model VI., and find out their impact on RPI. Shall we find a significant impact of inequality measures, in a second step, we decompose the proportion of variance attributed to country level differences into a part which is explained (or transmitted) trough the different inequality measures, and into another part which is unaffected by this.

Our results are presented in Table 5. Inequality measures, as seen (Column "B"), do have an influence on the respondent's RPI (holding all other factors constant). In countries where inequalities are larger, respondent are more pro-redistribution. From column "H" it is also seen that between-country differences in RPI can be attributed partly to the different inequality levels. The proportion of variance explained by between-country differences has been reduced (between 13-41%), if we control for various inequality measures (P50/P5, for example, is shown to be responsible for around 41% of the total between-country RPI differences).

The slope of RPI by material status in different inequality regimes

To find out how social differentials (between high and low material status people) of RPI differ in various inequality regimes, we need to estimate the interaction between the country level inequality and RPI by personal material status. To do that, we classified countries into three groups by the level of their inequalities. We used the expression "Low inequalities" where P95/P5[28] is smaller than 4.77 (DK, NL, SE, FI). We grouped into the "Middle inequalities" those countries where P95/P5 range between 4.77 and 6.61 (SI, AT, BE, LU, DE, HU, IE). Finally in "High inequalities" like PL, UK, ES, GR, IT, EE P95/P5 is higher than 6.61.

Nonparametric lowess smoothing estimates are plotted on Figure 7, showing coefficients on various levels of material status index for the three country groupings. The three curves seem to show different slopes. Predicted RPI seems to fall more steeply among citizens of the middle inequality group. In other words **the difference between high and low income status respondents' redistributive preferences is larger in countries where inequalities are in the middle range**. In high inequality countries and in low inequality countries the differences by material position is relatively lower. It is also noteworthy that high income status respondents in very unequal societies have in average nearly the same demand towards redistribution than low income status people in equal countries.

Using multilevel regression models (Model VI) we estimated the slope of material status in low, middle and high inequality countries. In low inequality countries rich and poor people do not differ from each other ($B = -0.05$, $p>0.1$), and in countries with medium level of inequalities the differences between rich and poor are bigger ($B = -0.1$, $p<0.01$) than in high inequality countries ($B = -0.02$, $p<0.05$).

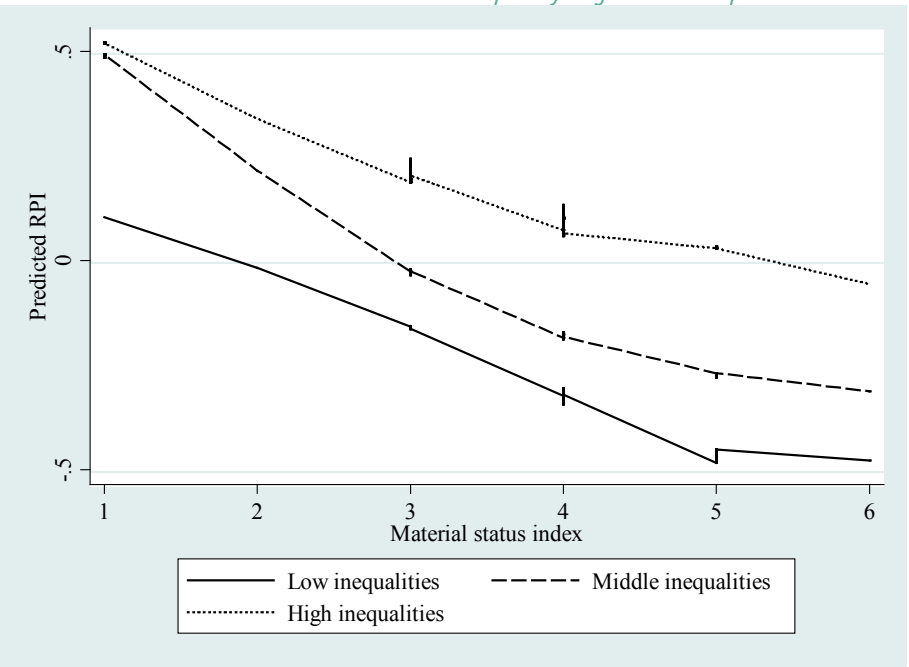
28 We use this indicator for the presentation because of its larger variance. We tested the other three, but the selection does not bias the main messages.

Table 5: Multilevel random models using different inequality measures

	A	B	C	D	E	F	G
Model	Inequality measure	Inequality measure's estimated fixed effect	Material status's estimated fixed effect	Estimated random intercept (county level)	Estimated random residual (country level)	Proportion of variance attributed to the random between-country effect	Proportion of between country random effect transmitted through the inequality measure
Calculation						D/(D+E)	1–(F/7.78%)
Model VI.			-0.06***	0.07***	0.83***	7.78%	
Model VI_A.	P95/P5	0.17***	-0.05***	0.05**	0.83***	5.68%	26.95%
Model VI_B.	P95/P50	0.69**	-0.05***	0.06**	0.83***	6.74%	13.32%
Model VI_C.	P50/P5	0.72***	-0.05***	0.04**	0.83***	4.60%	40.89%
Model VI_D.	Gini	5.09**	-0.05***	0.06**	0.83***	6.74%	13.32%

Restricted maximum likelihood estimation (REML), dependent variable: RPI
*Coefficients with *** are different from zero at the significance-level of 0.01, coefficients with ** are different from zero at the significance-level of 0.05, coefficients with * are different from zero at the significance-level of 0.1. All models are significant at 0.001 level.*
For further control variables included in the equations see Model VI. Regression parameters for all the other control variables are not included in this table.

Figure 7 Predicted RPI and material status in different inequality regimes — nonparametric lowess smoothing

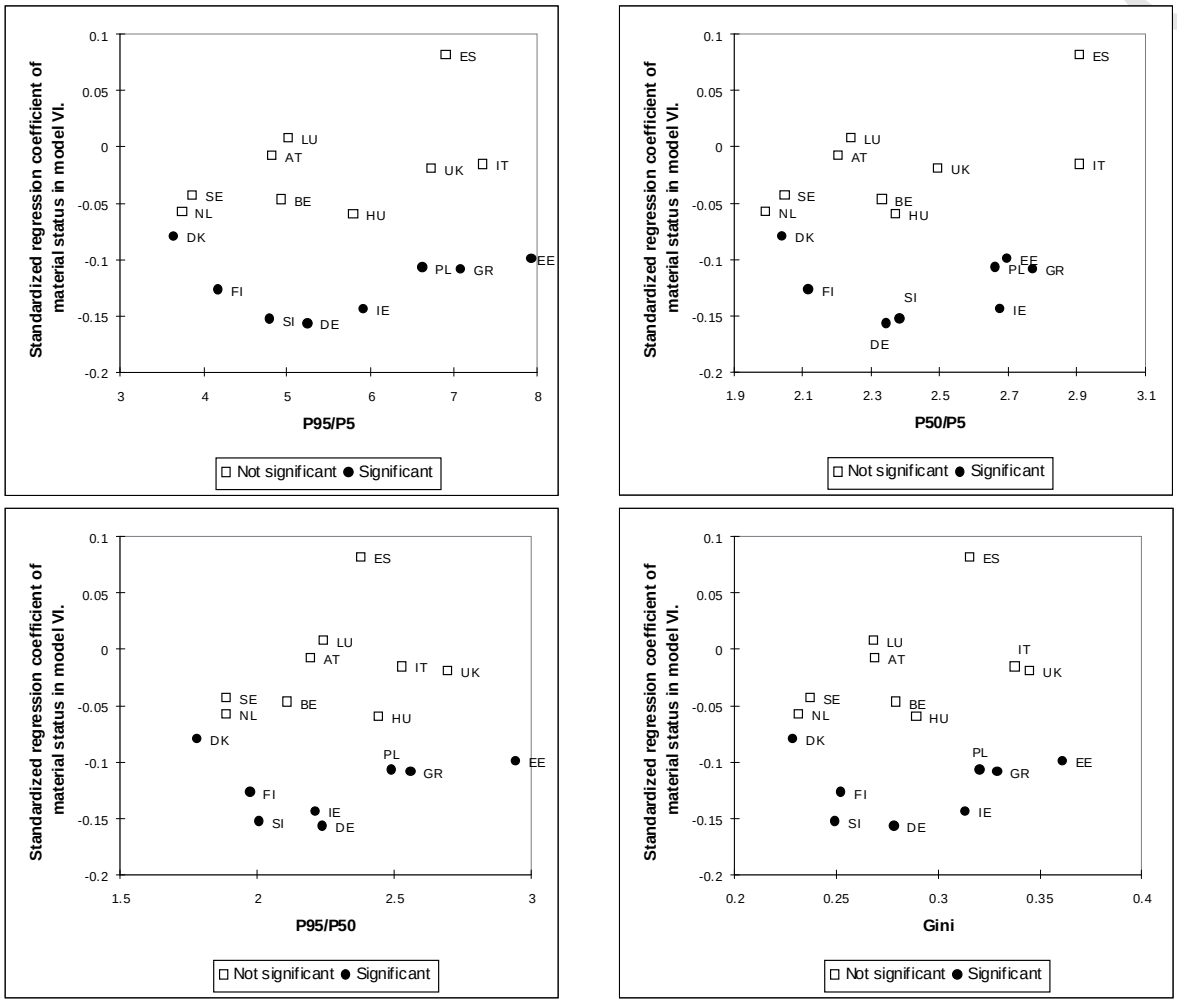


Note:
Small inequality countries: DK, NL, SE, FI
Middle inequality countries: SI, AT, BE, LU, DE, HU, IE
Large inequality countries: PL, UK, ES, GR, IT, EE

To go further in the analysis of the interactions, we ran separate OLS estimations for each and every country (with Model VI specifications and variable sets). The standardized regression parameters belonging to the material status variable are plotted against inequality measures in Figure 8. (with separate notations for statistically significant parameters). When focusing only on the significant parameters, we found that the coefficient increases (in negative) until a point, then it decreases. In other words the difference between rich and poor respondents in "high inequality" countries is smaller than in "middle inequality" countries, but the same difference in "middle inequality countries" is higher than in "low inequality" countries". (This is, to some extent, the same result as we found in Fig 7, viewed from a different angle)[29].

29 There are many reasons for us to be cautious with the interpretation of this finding: we have only data for a selection of countries; we have only a second best proxy of the material status, etc. Moreover the confidence intervals around the slope coefficients are very large and weaken very much the reliability of the U shape pattern. Nevertheless, this finding certainly merits some further investigations in the future.

Figure 8: Standardized regression coefficients of material status and the level of inequality



Standardized regression coefficients are calculated from country level OLS regressions, using Model VI. The level of significance used in the grouping ($p<0.1$)

5.3. The structure of inequality and the votes of the middle classes

The position of the median voter is always relative (to the poor and to the rich). Depending on the actual structure of inequality, the median voter's preferences may resemble to those of the higher or those of the lower income groups. Lupu and Pontusson (2010: 6) argue that when income distance between the poor and the middle-income group is small, members of the middle-income group might feel more affinity with the poor (since there is a greater probability for them to become poor). This may motivate them to vote with the poor when redistribution is on the political agenda. When, in turn, the objective position of those in the middle is closer to the affluent, they tend (in coalition with the affluent) to outvote the poor in terms of the redistribution. In other words: for redistribution preference social affinity with the poor is an inverse of social affinity with the affluent (Lupu and Pontusson, 2010: 8).

While this proposition is very much plausible, it is not easy to test in the context of our datasets as Eurobarometer does not contain an objective measure of income position. Hence we need to apply a two-step procedure here. First we analyse how the population distribution by self reported income status (in EB) relates to objective inequality measures (in LIS) for the same country universe. Then we analyse how preferences of the middle income groups relate to preferences of the poor and the of the rich. Throughout the analysis we assume that the median (voter) is situated somewhere in the middle class group[30].

The relationship between objective inequality (horizontal axis) and the distribution of self assessed material status (vertical axis) is illustrated on Figure 9. From this it is seen that the higher is the objective difference between the median and the lower tail of the income distribution (P50/P5), the larger is the percentage of people who feel themselves poor. On the other hand the smaller is the difference between the median income and the rich, (P95/P50), the larger is the share of citizens who perceive themselves rich. In other words we find that deeper (objective) poverty correlates with a larger share of self-assessed poor while relatively better (objective) position of the middle class correlates with higher share of self assessed affluence. This asymmetry is logical and, in itself, does not contradict to the hypothesis by Lupu and Pontussen (2010). Nevertheless, it is a hint that when analysing redistributive claims, due care is warranted.

Mean values of middle class[31] RPI are shown in various subjective social structure contexts in Annex 3. As it can be seen, average middle class RPI show a slightly (if any) positive correlation with the share of low income groups and also with the size of the middle class, but a negative correlation with the size of high income groups. To put it differently: redistributive preferences of "those in the middle" will be higher if they live in a society where many people feel "poor" and only a few feel "rich".

As composition (age, education, labour market etc heterogeneity of the middle group) effects as well as general country effects (due to different welfare attitude climate in various countries) might conflate the above findings, we also present regression coefficients for the low and high material position group dummies[32] the middle group serving as reference categories (controlled for a number of factors as in Model VI presented earlier). These are presented in Figure 10. These coefficients now represent average mean RPI differences of the "poor" and of the

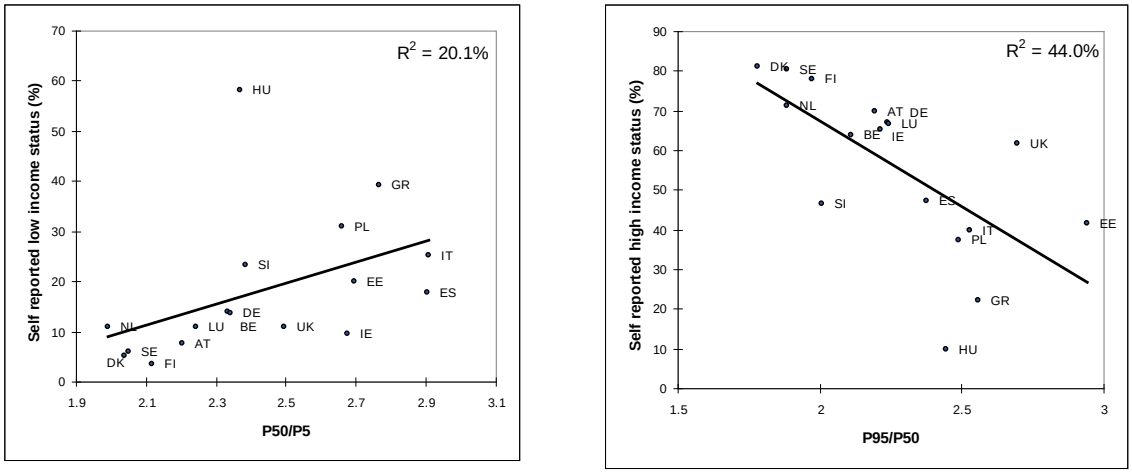
30 This is a non-trivial assumption as differential turnout by income groups might shift the position of the pivotal voter significantly away from the middle of the income distribution.

31 We divided our six-point scale material status index into three categories. Categories 1, and 2, were grouped into "Low income status respondents". Categories 3, 4 and 5 were combined into "Middle income status respondents". Category 6, is defined as "High income status respondents". The „Middle income status" refers to the middle class

32 The material position dummies are created here with a slightly different methodology from the one applied earlier. First we created a continuous variable for self reported income position which was the predicted value in the regression explaining the self evaluated material situation of the household (qa44) as dependent variable with the following independent dummy coded variables qa43 (whether the respondent has much higher/somewhat higher/more or less the same/somewhat lower/much lower than the lowest net monthly income which would need to have a minimum acceptable standard of living) and qa35 (whether the respondent make ends meet). After running the regression analysis and saving the unstandardized residual we divided it into three categories (low, middle and high income position) according to its distribution.

"well-off" in relation to the self-reported middle class, holding all other factors constant (coefficients significant at 10% level are marked dark). In the majority of countries the redistributive preferences of low income status people do not differ significantly from their middle income status counterparts (there is a significant difference only in BG, FR, LT, and UK), while in the majority of the countries there is a significant difference between medium and high income status respondents (no significant difference found in BG, CY, ES, FI, HU, MT, RO, SE, SI). It is also shown in the two boxes of Figure 10 that – in general – a larger share of (self reported) poor in society goes together with a larger distance between the redistribution preference of the middle and of the poor. At the other end if there are many people perceiving themselves affluent, the mean differences between the middle and the rich are large[33]

Figure 9. Objective income inequality and the share of subjective poverty (left) and affluence (right)

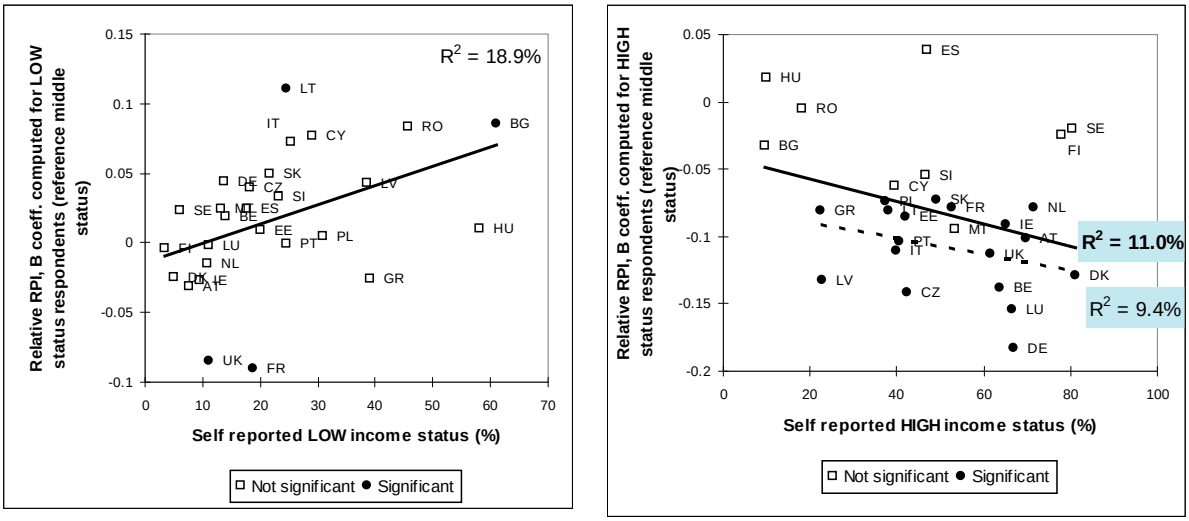


Notes: Source of data:
Y axis: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation
X axis LIS, Countries from LIS wave VI: AT, DE, DK, ES, FI, GR, HU, IT LV, PL, SE, UK; Countries from LIS wave V: BE, EE, IE, NL, SI, , own calculation

However, contrasting RPI differences between the middle against P50/P5 or comparing the RPI differences between the middle and the affluent to P95/P50 do not show any systematic relationship. With another words, we cannot find very strong support for the idea that larger poverty leads to larger differences between redistributive preferences of the middle and of the poor. The weakness of this relationship, however, might partly come from measurement: self reported material position may not be a good proxy for social closeness if people (say) overestimate social inequalities and, consequently, "misplace" themselves within society.

33 Note that negative numbers on the y axis mean that compared to the self reported middle class poor/rich citizens have lass demand towards redistribution. For example In the UK and France self reported low income status people have lower demand toward redistribution than the "middle class", while in Hungary and Spain the self reported rich have more demand towards redistribution than the "middle class".

Figure 10. Relative RPI (regression coefficients for material status dummies) by the share of self reported poor (left) and the self reported rich (right) income status



Source of data: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation
Standardized regression coefficients (Y axis) are calculated from country level OLS regressions, using Model VI.
We divided our six-point scale material status index into three categories. Categories 1, and 2, were grouped into "Low income status respondents". Categories 3, 4 and 5 were combined into "Middle income status respondents". Category 6, is defined as "High income status respondents". Reference category was: "Middle income status respondents.
The level of significance used in the grouping ($p<0.1$)
The dashed line (on the figure in the right hand box) is fitted only to the significant results.

6. Summary and conclusions

In this paper we attempted to explain attitudes towards redistribution in cross-national context. To perform this, we analysed attitude data from Eurobarometer (EB72.1 survey on poverty and social exclusions) and data on "objective" inequalities from the Luxemburg Income Study. Combining different datasets for the same countries is the only way to analyse the relationship between inequality and redistributive attitudes as income surveys do not contain attitude data and Eurobarometer is not suitable for studying income inequalities, nor does it contain any really reliable variable for the income situation of the respondents. This setting (while advantageous in many respect) has a number of drawbacks for a really careful analysis of the micro-macro links (which are also very important from our perspective).

Throughout the paper we used a special measure of "redistributive" attitude. Differing from some earlier studies (where redistribution was understood as a tax/benefit mechanism transferring resources from the rich to the poor), we used an extended definition that captures broader scale of public activities and expenditures (covering employment, health, education, and other general redistributive items). The composite variable built to measure this latter, broader concept proved to be useful to understand the general demand for redistribution.

The basic question was to find out how demand for redistribution relates to actual, observable income inequality. As a general frame of reference we referred to the Meltzer-Richard setting but we also underlined that a full account of the predictive power of the MR would necessitate bringing a great number of political/institutional variables into the analysis (which we could not perform at this stage).

Our results are in accordance with findings of other research on attitudes as we also have shown a continued and very high support of state redistribution in many European countries, and also we found that the overall level of support and the within country consensus varies widely.

The analytic frame of MR (in a narrow sense) would suggest a linear, inverse relationship between individual income and redistributive preference. We found, however, a more complex structure of determinants of redistributive claims. The demand for redistribution is, while mostly derived from rational self interest (material position, labour market status, expected mobility expectations), also driven by general attitudes about the role of personal responsibility in one's own fate, by general beliefs about causes of poverty and the like. This latter factor was found to be one of the strongest individual determinants: the more people believe poverty is caused by "private" reasons like bad luck, laziness etc, the less people will call for redistribution, while the general belief that society operates on the basis of unjust or otherwise disliked principles will increase general demand for redistribution. This is in line, for example, with Piketty (1995) who explain that

individual beliefs about the role of effort in social mobility are strongly linked to the experiences of upward mobility, and thus has an effect on redistributive preferences. Also our result is similar than those by Corneo and Grüner (2002), who found that all others being equal people who perceived that hard work is important for getting ahead in life have lesser demand for redistribution.

We defined country level inequality as a contextual variable and attempted to find out how the level of inequality will, in itself, shape attitudes, both for the grand average and also for groups at various segments of the distribution. For this, we found it useful to apply inequality measures that allow reflections on the structure of inequality (i.e. those measures that capture the skew of the distribution and, via this, capture social distances). The argument here was that if we want to analyse attitudes of people at various parts of the distribution, we need to apply a measure that somehow "simulates" their perspectives. This helped, in particular, to identify the relative position of the middle, covering "somewhere inside" the median voter whose role might sometime be pivotal.

With reference to contextual effects, we found that while the affluent, the middle and the poor have different attitudes towards inequalities in every country (the "rich" showing less appetite for redistribution), the distance between attitudes also seems (at elast to some extent) be determined by the distance between relative positions. In countries having larger level of aggregate inequalities the general redistributive preference (of the rich, of the middle and of the poor) is higher. However, although the difference between rich and poor is larger in middle inequality countries than in countries with high inequality levels, large statistical inference prevents us from drawing any stronger general conclusions on this issue.

The attitudes of the middle income group are especially important, primarily because of the political consequences of their standing. For the analysis of this we could use a second best proxy only, due to the unfortunate lack of a reliable income variable in the opinion survey we had. However, even this second best analysis provides very interesting tentative conclusions. First and foremost: redistributive preferences of "those in the middle" seem to show higher if they live in a society where many people feel "poor" and only a few feel "rich". Further: shall there be a large share of population rating themselves poor, the mean differences in redistribution preference between the middle and the poor will also be large (however, in the majority of the cases the difference in RPI between the poor and middle is not significant). At the other end if there are many people perceiving themselves affluent, the mean differences between the middle and the rich are large. This have a serious implication for both the political consequences and for the theory. In terms of politics: the actual redistributive impact (on public expenditures) of differential redistributive attitudes of the various social strata will heavily depend on turnout at the ballot. Shall it be large, more redistributive policies could be "sold" and shall it be smaller, middle classes would outvote the

poor (other things constant). As for the theoretical implications: for the MR paradigm to hold, in addition to the objective income situation of the electorate, the self evaluation of the income skew in general and the median voter in particular should also be taken into account. This is our major proposition from this paper. However, there are some particular consequences for the theory as well.

The datasets we used have many advantages (as hopefully we were able to prove it with the analysis above) but there are many weaknesses, unfortunately. First and foremost: the testing of the inequality-redistribution relationship would necessitate having really pre-transfer and pre-tax incomes at the outset (Milanovic 2000, 2009), in addition to clarifying a number of other factors and comparability problems to be taken into account (Lambert et al, 2010). This is not possible, given the surveys we have and maybe it is not even possible theoretically, given the inherent nature of all counterfactuals. Further, it is a serious problem that Eurobarometer does not have a reliable income proxy for the respondents. This makes it impossible to test how individual perceptions of material positions relate to actual ranks in the distribution – a very important element for any tests of the median voter theorem.

Finally, even under the same data conditions, there are very promising directions for future research. First, adding new contextual variables to the analysis would make it possible to further improve our knowledge on reasons for cross country differentials and second period-to-period analyses (at least on country level) would help improve our knowledge on the effects of inequality change on change in redistributive claims.

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Annexes

Annex 1. Data bases used in the analysis

The **Eurobarometer (EB)** initially was the name of the harmonized opinion polls commissioned by the European Commission, conducted from the beginning of the 1970s in the member states of the European Community, with the aim of analysing social and political changes. Later, the surveys came to cover the member states of the European Union; they are conducted twice a year – in the spring and the autumn. From the 1990s, these surveys, known as "Standard Eurobarometer" surveys were complemented by polls that specifically targeted candidate countries ("Candidate Countries Eurobarometer"), and by surveys that analysed specific or special topics ("Special Eurobarometer", "Flash Eurobarometer"). The actual data for Standard and Special Eurobarometer surveys are accessible (upon registration) on the GESIS website at: http://zacat.gesis.org/webview/index.jsp.

In our analysis we used **Eurobarometer Survey On Poverty And Social Exclusion** (Special Eurobarometer 321 / Wave 72.1). The survey was carried out in September 2009 for preparing the European Year Against Poverty (2010). The research's aim is to shed some light on poverty and social exclusion. The survey examined, among other things, people's awareness of the extent of poverty within the European Union, the perceived personal and societal reasons behind poverty. People's perception about the urgency of governmental action to combat poverty is also examined, together with the level of administration felt to be mostly responsible for it. The full report, which analyse the data of main issues of the survey, is available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_321_en.pdf.

The **European Social Survey (ESS)** was launched with the support of the European Commission and aims to monitor the changing attitudes of 30 (mostly European) countries. There are four completed "rounds" of this survey (2002, 2004, 2006 and 2008). Each round contains certain permanent parts, as well as some that change. In 2002, the changing modules were the attitudes towards immigrants and refugees, and the position of individuals in social and non-governmental organizations (Citizenship, Involvement and Democracy); in 2004, the changing modules were on family and work, healthcare and economic ethics; in 2006, there were changing modules on the timing of events in people's personal careers, and on personal and social well-being, while in 2008 welfare atti-

tudes in a changing Europe and experiences and expressions of ageism were included in the changing model. The last (fourth) wave of the survey was published after charring out analysis.

All the data and supplementary information about the survey (including questionnaires, fieldwork-reports) are accessible on the research website, at: www.europeansocialsurvey.org/.

From the **Luxemburg Income Study (LIS)** is a non-profit project headquartered in Luxembourg which produces a cross-national micro database including income microdata from large number of countries at multiple points in time from 1980 to 2004. The micro data of the countries are harmonised (lissificated) and are suitable for cross-sectional analysis. http://www.lisproject.org/ The data we use come from the Vth and VIth wave.

Annex 2. Questions to measure redistributive preference and their distributions in the European countries (descriptions)

Table A2.1.

	The (NATIONALITY) Government should ensure that the wealth of the country is redistributed in a fair way to all citizens / QA14 For each of the following statements, please tell me whether you ...					
	Totally agree	Tend to agree	Tend to disagree	Totally disagree	DK	Total
AT	44,2%	44,8%	7,9%	1,8%	1,3%	1007
BE	44,3%	36,3%	14,1%	4,5%	0,8%	1005
BG	55,5%	27,7%	8,4%	2,8%	5,6%	1014
CY	68,2%	22,1%	5,5%	2,4%	1,8%	507
CZ	25,6%	40,1%	21,1%	9,8%	3,4%	1007
DE	47,7%	34,7%	11,0%	4,5%	2,1%	1548
DK	31,9%	40,2%	18,5%	8,0%	1,4%	1020
EE	46,4%	27,1%	16,3%	8,1%	2,2%	1001
ES	50,7%	39,2%	6,2%	1,0%	2,9%	1026
FI	54,4%	34,7%	7,7%	2,4%	0,8%	1008
FR	48,8%	36,6%	8,9%	3,0%	2,7%	1027
GR	78,6%	18,4%	2,1%	0,7%	0,2%	999
HU	73,3%	20,4%	4,2%	1,4%	0,7%	1001
IE	51,1%	36,3%	4,0%	1,4%	7,2%	1001
IT	41,3%	44,1%	10,0%	2,3%	2,3%	1039
LT	52,0%	29,2%	9,3%	4,6%	4,9%	1023
LU	45,6%	36,0%	13,0%	3,8%	1,6%	500
LV	61,8%	23,3%	8,7%	3,6%	2,6%	1011
MT	58,4%	32,6%	5,6%	1,4%	2,0%	500
NL	34,2%	34,9%	20,4%	9,6%	0,9%	997
PL	35,6%	41,7%	12,4%	4,3%	6,0%	1000
PT	45,1%	46,5%	4,9%	0,5%	2,9%	1051
RO	55,0%	31,2%	6,3%	1,0%	6,5%	1013
SE	54,3%	30,1%	11,7%	2,9%	1,0%	1007
SI	58,4%	27,1%	10,4%	2,9%	1,2%	1026
SK	34,6%	42,7%	15,2%	4,9%	2,7%	1050
UK	36,0%	38,4%	16,4%	5,6%	3,6%	1331
Total	48,7%	34,3%	10,6%	3,8%	2,7%	26719

Table A2.2.

	QA25a People think differently on what steps should be taken to help solving social and economic problems in (our country). I'm going to read you two contradictory statements on this topic. Please tell me which one comes closest to your view.				
	It is primarily up to the (nationality) government to provide jobs for the unemployed	Providing jobs should rest primarily on private companies and markets in general	It depends (spontaneous)	DK	Total
AT	51,8%	29,1%	16,8%	2,3%	1006
BE	47,1%	40,4%	11,4%	1,1%	1005
BG	67,5%	20,5%	8,9%	3,1%	1016
CY	84,6%	9,7%	5,3%	0,4%	507
CZ	60,3%	36,4%	2,2%	1,1%	1006
DE	44,5%	46,3%	7,4%	1,9%	1549
DK	57,2%	36,6%	4,7%	1,6%	1020
EE	49,9%	28,2%	18,7%	3,2%	1000
ES	60,5%	20,6%	16,8%	2,1%	1026
FI	50,7%	42,6%	5,3%	1,4%	1009
FR	30,2%	61,2%	5,2%	3,4%	1027
GR	86,9%	7,1%	5,6%	0,4%	1000
HU	69,1%	25,0%	4,3%	1,6%	1000
IE	54,9%	19,0%	17,2%	9,0%	1002
IT	56,7%	24,3%	15,5%	3,6%	1039
LT	51,8%	35,6%	8,8%	3,8%	1023
LU	45,1%	41,9%	10,0%	3,0%	501
LV	73,3%	18,6%	6,4%	1,7%	1011
MT	64,9%	20,2%	12,0%	3,0%	501
NL	48,3%	43,9%	6,4%	1,3%	997
PL	70,4%	19,7%	5,1%	4,8%	1000
PT	55,4%	22,9%	15,7%	6,0%	1051
RO	56,6%	25,8%	8,9%	8,7%	1014
SE	49,6%	40,8%	7,7%	2,0%	1006
SI	39,2%	45,9%	13,2%	1,8%	1025
SK	68,5%	30,2%	0,9%	0,5%	1050
UK	58,8%	29,8%	8,3%	3,1%	1330
Total	56,9%	31,1%	9,2%	2,8%	26721

Table A2.3.

	QA25b And which of these two statements comes closest to your view?				
	Education should be totally free, even if this means that the quality might be lower	Tuition fees are necessary for providing high quality education, even if this means that some people won't be able to afford it	It depends (SPONTANEOUS)	DK	Total
AT	38,2%	40,9%	18,3%	2,6%	1007
BE	47,9%	35,3%	13,8%	3,0%	1005
BG	59,3%	24,3%	12,0%	4,4%	1014
CY	70,3%	20,3%	8,7%	0,8%	508
CZ	59,2%	34,6%	5,0%	1,2%	1008
DE	66,6%	23,8%	6,8%	2,8%	1550
DK	65,0%	26,6%	6,9%	1,6%	1020
EE	52,9%	27,3%	16,7%	3,1%	1000
ES	56,6%	16,5%	19,2%	7,7%	1026
FI	65,0%	30,8%	3,2%	1,1%	1008
FR	61,3%	21,6%	8,9%	8,3%	1028
GR	61,5%	9,9%	20,4%	8,2%	1001
HU	61,0%	25,1%	8,8%	5,1%	1000
IE	57,7%	13,8%	19,8%	8,7%	1001
IT	50,0%	19,2%	24,1%	6,7%	1038
LT	59,6%	25,6%	10,7%	4,1%	1023
LU	61,2%	19,2%	12,6%	7,0%	500
LV	61,2%	23,6%	11,0%	4,2%	1012
MT	61,0%	19,4%	16,4%	3,2%	500
NL	35,5%	47,3%	13,3%	3,9%	996
PL	69,3%	16,7%	8,2%	5,8%	1001
PT	53,6%	22,2%	17,0%	7,2%	1051
RO	56,2%	18,9%	14,7%	10,2%	1014
SE	59,7%	29,8%	7,5%	3,0%	1008
SI	68,0%	21,3%	8,7%	2,0%	1025
SK	68,6%	28,5%	2,1%	0,9%	1050
UK	69,1%	21,0%	6,8%	3,0%	1331
Total	59,1%	24,8%	11,7%	4,4%	26725

Table A2.4

	QA25c And still about the different steps that should be taken to help solving social and economic problems in (our country), which of these two statements comes closest to your view?				
	Higher level of health care, education and social spending must be guaranteed, even if it means that taxes might increase	Taxes should be de-creased even if it means a general lower level of health care, education and social spending	It depends (SPONTANEOUS)	DK	Total
AT	43,5%	27,4%	24,4%	4,7%	1007
BE	60,3%	25,7%	11,1%	3,0%	1004
BG	73,7%	11,9%	10,0%	4,3%	1016
CY	77,7%	12,8%	8,3%	1,2%	507
CZ	62,1%	29,3%	4,7%	4,0%	1007
DE	60,9%	23,0%	11,3%	4,8%	1549
DK	80,2%	12,7%	6,0%	1,1%	1020
EE	64,0%	18,0%	14,4%	3,6%	999
ES	61,3%	14,2%	17,3%	7,2%	1025
FI	84,0%	12,4%	3,2%	0,4%	1009
FR	68,8%	15,7%	7,4%	8,1%	1027
GR	59,3%	12,2%	21,9%	6,6%	1001
HU	55,8%	28,2%	8,2%	7,8%	1000
IE	64,8%	10,4%	15,4%	9,4%	1000
IT	54,1%	16,7%	22,3%	6,8%	1039
LT	42,9%	40,5%	11,0%	5,6%	1023
LU	75,8%	11,8%	6,8%	5,6%	499
LV	44,0%	34,7%	14,7%	6,5%	1011
MT	56,0%	17,2%	17,0%	9,8%	500
NL	78,1%	10,6%	7,9%	3,3%	996
PL	57,4%	22,3%	9,5%	10,8%	1000
PT	61,5%	13,5%	17,9%	7,0%	1050
RO	50,4%	26,3%	12,4%	10,9%	1013
SE	83,4%	10,0%	4,3%	2,3%	1008
SI	43,3%	37,1%	16,4%	3,2%	1025
SK	59,9%	35,0%	2,9%	2,3%	1050
UK	76,4%	14,4%	6,2%	2,9%	1331
Total	62,7%	20,5%	11,6%	5,3%	26716

Table A2.5.

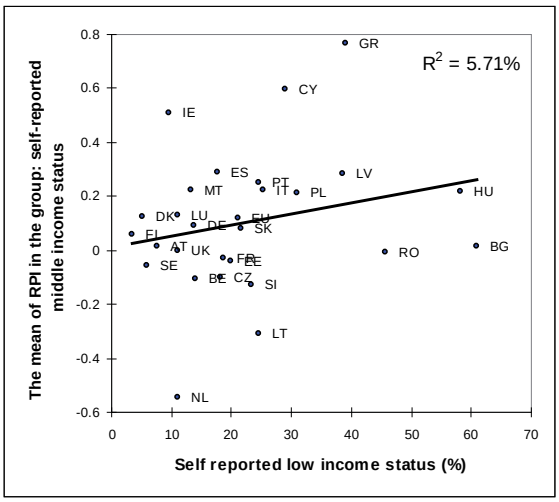
	QA25d And which of these two statements comes closest to your view?				
	The (NATIONALITY) Government should take more responsibility to ensure that everyone is provided for	People should take more responsibility to provide for themselves	It depends (SPONTANEOUS)	DK	Total
AT	54,4%	31,5%	13,1%	1,0%	1007
BE	43,0%	47,5%	9,2%	0,4%	1005
BG	66,5%	24,5%	6,9%	2,1%	1015
CY	73,6%	22,3%	3,6%	0,6%	507
CZ	55,5%	40,5%	3,5%	0,5%	1007
DE	54,9%	38,0%	6,5%	0,6%	1549
DK	43,8%	50,0%	5,0%	1,2%	1020
EE	49,9%	33,3%	14,7%	2,1%	1000
ES	66,7%	17,3%	13,1%	2,9%	1026
FI	51,6%	42,9%	5,0%	0,6%	1008
FR	54,3%	35,1%	7,1%	3,5%	1027
GR	82,2%	9,8%	7,3%	0,7%	1000
HU	70,7%	23,5%	4,0%	1,8%	1000
IE	59,6%	22,1%	12,3%	6,0%	1001
IT	68,5%	16,2%	12,3%	3,0%	1039
LT	30,1%	57,7%	8,8%	3,3%	1022
LU	44,2%	47,8%	6,8%	1,2%	500
LV	63,3%	26,7%	8,6%	1,4%	1012
MT	55,1%	31,1%	11,4%	2,4%	499
NL	25,4%	65,6%	7,2%	1,7%	995
PL	57,7%	31,2%	6,9%	4,2%	1001
PT	58,6%	23,1%	12,9%	5,3%	1051
RO	57,0%	28,7%	8,3%	6,0%	1012
SE	37,2%	53,0%	8,1%	1,6%	1007
SI	39,5%	47,1%	12,6%	0,8%	1025
SK	65,0%	33,0%	1,4%	0,7%	1050
UK	40,9%	49,5%	7,7%	1,8%	1331
Total	54,1%	35,4%	8,3%	2,1%	26716

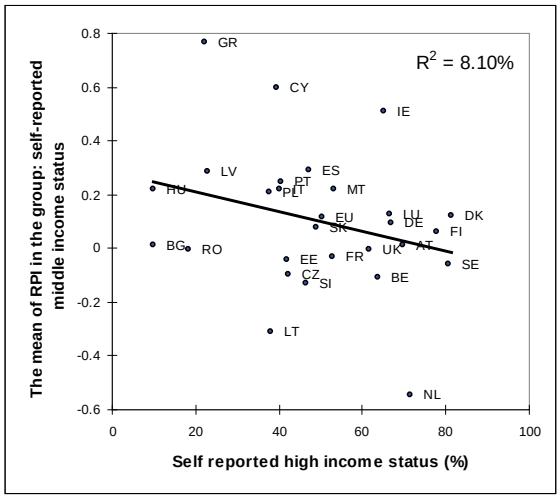
Table A2.6. The macro data on poverty and inequality used in the analysis

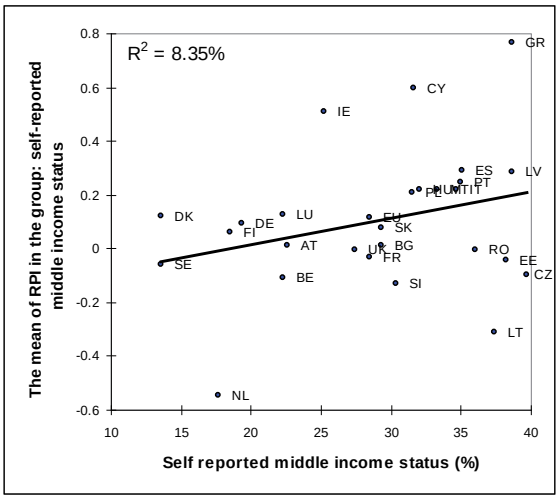
Country	LIS wave	P95/P5	P95/P50	P50/P5	Gini
AT	*	4.83	2.19	2.20	0.27
BE	**	4.92	2.11	2.33	0.28
DE	*	5.24	2.24	2.34	0.28
DK	*	3.63	1.78	2.04	0.23
EE	**	7.92	2.94	2.69	0.36
ES	*	6.90	2.38	2.90	0.32
FI	*	4.17	1.97	2.12	0.25
GR	*	7.08	2.56	2.77	0.33
HU	*	5.78	2.44	2.37	0.29
IE	**	5.91	2.21	2.67	0.31
IT	*	7.35	2.53	2.91	0.34
LU	*	5.02	2.24	2.24	0.27
NL	**	3.75	1.89	1.99	0.23
PL	*	6.62	2.49	2.66	0.32
SE	*	3.86	1.89	2.05	0.24
SI	**	4.78	2.01	2.38	0.25
UK	*	6.72	2.70	2.49	0.35

** Source: LIS wave VI., own calculation*
*** Source: LIS wave V., own calculation.*

Annex 3. Relative share of (self-reported) income groups and average RPI of middle income status groups



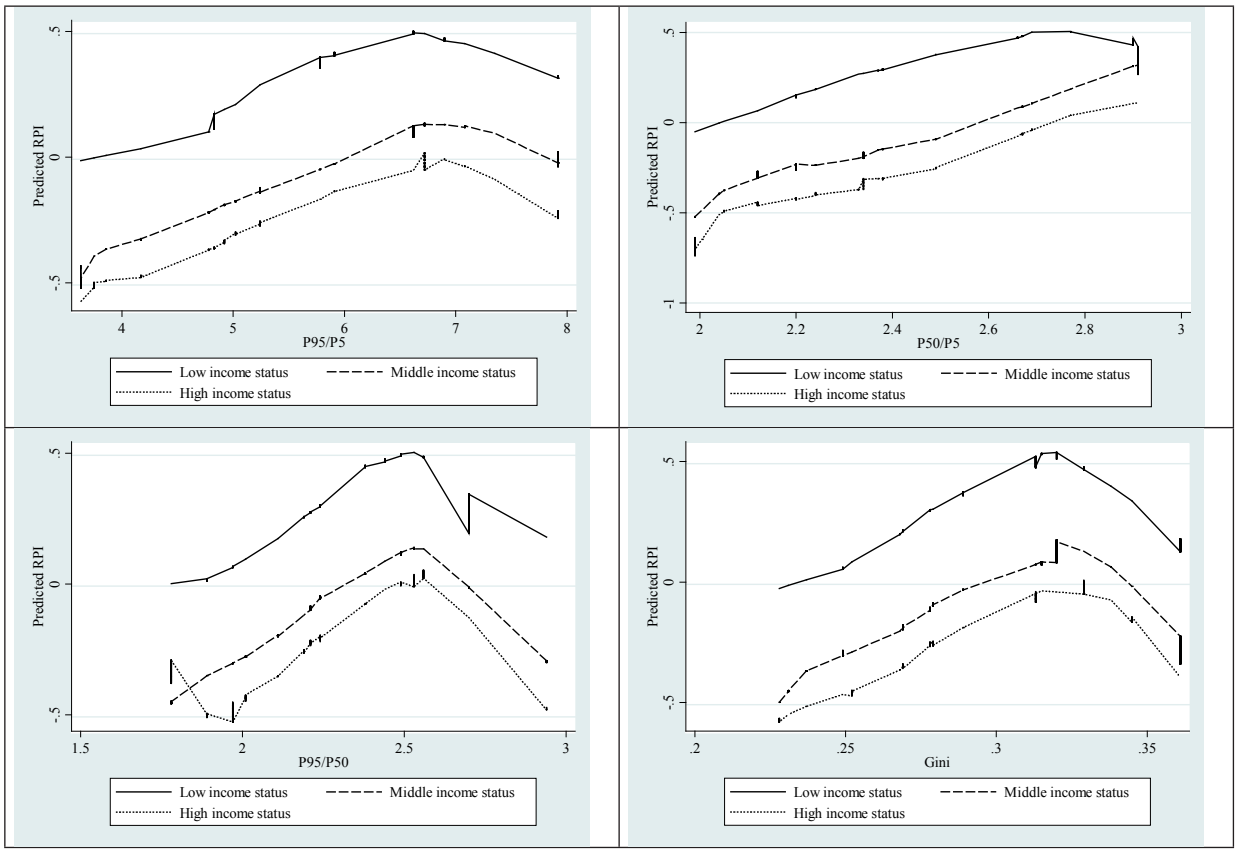




Source of data: Special Eurobarometer (72.1.) on poverty and social exclusion, 2009, own calculation

Annex 4. Lowess parameter estimates (regression coefficients of material status on RPI) under various inequality regimes, and for the lower, middle and high material position groups

Lowess parameter estimates under various inequality regimes for the lower, middle and high material position groups



GINI Discussion Papers

Recent publications of GINI. They can be downloaded from the website www.gini-research.org under the subject Papers.

DP 6 **Income Inequality and Participation: A Comparison of 24 European Countries + Appendix**
Bram Lancee and Herman van de Werfhorst
January 2011

DP 5 **Household Joblessness and Its Impact on Poverty and Deprivation in Europe**
Marloes de Graaf-Zijl
January 2011

DP 4 **Inequality Decompositions – A Reconciliation**
Frank A. Cowell and Carlo V. Fiorio
December 2010

DP 3 **A New Dataset of Educational Inequality**
Elena Meschi and Francesco Scervini
December 2010

DP 2 **Coverage and adequacy of Minimum Income schemes in the European Union**
Francesco Figari, Tina Haux, Manos Matsaganis and Holly Sutherland
November 2010

DP 1 **Distributional Consequences of Labor Demand Adjustments to a Downturn. A Model-based Approach with Application to Germany 2008-09**
Olivier Bargain, Herwig Immervoll, Andreas Peichl and Sebastian Siegloch
September 2010

Information on the GINI project

Aims

The core objective of GINI is to deliver important new answers to questions of great interest to European societies: What are the social, cultural and political impacts that increasing inequalities in income, wealth and education may have? For the answers, GINI combines an interdisciplinary analysis that draws on economics, sociology, political science and health studies, with improved methodologies, uniform measurement, wide country coverage, a clear policy dimension and broad dissemination.

Methodologically, GINI aims to:

- exploit differences between and within 29 countries in inequality levels and trends for understanding the impacts and teasing out implications for policy and institutions,
- elaborate on the effects of both individual distributional positions and aggregate inequalities, and
- allow for feedback from impacts to inequality in a two-way causality approach.

The project operates in a framework of policy-oriented debate and international comparisons across all EU countries (except Cyprus and Malta), the USA, Japan, Canada and Australia.

Inequality Impacts and Analysis

Social impacts of inequality include educational access and achievement, individual employment opportunities and labour market behaviour, household joblessness, living standards and deprivation, family and household formation/breakdown, housing and intergenerational social mobility, individual health and life expectancy, and social cohesion versus polarisation. Underlying long-term trends, the economic cycle and the current financial and economic crisis will be incorporated. Politico-cultural impacts investigated are: Do increasing income/educational inequalities widen cultural and political 'distances', alienating people from politics, globalisation and European integration? Do they affect individuals' participation and general social trust? Is acceptance of inequality and policies of redistribution affected by inequality itself? What effects do political systems (coalitions/winner-takes-all) have? Finally, it focuses on costs and benefi ts of policies limiting income inequality and its effi ciency for mitigating other inequalities (health, housing, education and opportunity), and addresses the question what contributions policy making itself may have made to the growth of inequalities.

Support and Activities

The project receives EU research support to the amount of Euro 2.7 million. The work will result in four main reports and a final report, some 70 discussion papers and 29 country reports. The start of the project is 1 February 2010 for a three-year period. Detailed information can be found on the website.

www.gini-research.org

GINI GROWING INEQUALITIES' IMPACTS

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