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Income Inequality and Voter Turnout

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Income inequality and voter turnout

Evidence from European national elections

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Abstract

The paper looks at the link between inequality and voter turnout, and derives three hypothesis from previous literature. It is shown that inequality associates negatively with turnout at the national elections (hypothesis 1). Although this is not a very strong effect, but it is net of several factors affecting voter turnout that are empirically well proven – such as individual characteristics or different features of the political system. The literature suggests that this negative association is either due to the lower turnout of the poor relative to the rich in high inequality countries (hypothesis 2) or due to the effects of the universal welfare state, which increases turnout through altered social norms as well as decreases inequality through government intervention (hypothesis 3). Although none of the hypotheses were refuted, neither was really supported by the data. I also tested whether inequalities at the top or at the bottom have a different affect on turnout. Although the results, again, are not very robust, it seems that larger differences in income between the very rich and the middle decreases overall turnout, while higher difference between the middle and the very poor increases turnout. This is just the opposite of what is expected from the Downsian rational voter model.

JEL codes: D72, D63

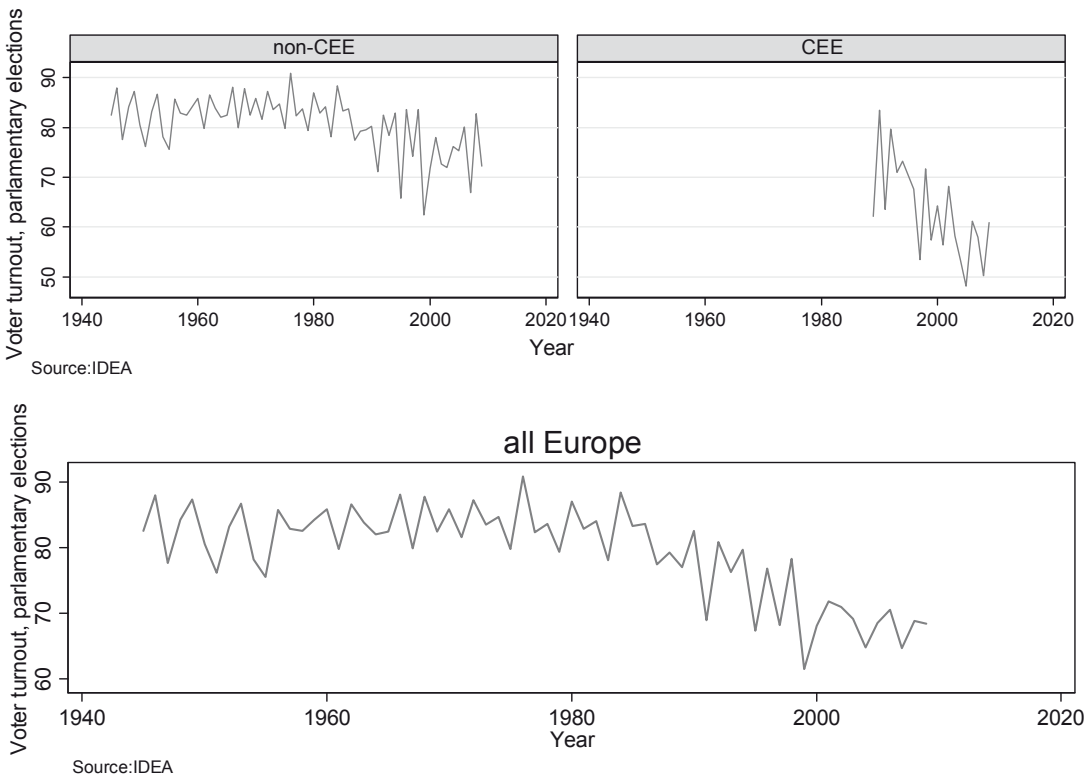
While effects of individual resources and institutional characteristics on political participation have long been established, there is no knowledge of the effect of inequality on political participation. In particular, does an increase in inequality mobilize or de-mobilize citizens to participate in politics? We know only a little how societal environment affects voter political participation. Inequality, for instance, can have an impact through changing social norms (Lister 2007), through altered political agenda (Solt 2010; Mueller and Stratmann 2003) or through other chanels (Paczynska 2005). It is thus likely that in societies with greater income inequalities, we should observe polarization of participation modes, where higher inequality will be associated with a larger divergence of participation. This paper looks only at one of these modes of political participation: voter turnout. Although voting can be seen as the least unequal type of participation, it is still far from being unbiased (Lijphart 1997). We know that voting is strongly conditioned on socio-economic position (Geys 2006b; Lijphart 1997; Blais 2006; Gallego 2007), on civic resources (Verba et al 1995), and also on country level factors (Geys 2006b, 2006a; Blais 2006). But we know less about the link between inequality and voter turnout. This paper will look at this link, and speculate about the possible reasons why inequality might influence voter turnout.

In the following, I first review the current literature on the link between inequality and voter turnout, and derive some hypotheses from these. The next section introduces the European Election Survey (EES) data which is used to test the hypotheses, and executes the tests. The third section speculates about the results, while the last section concludes.

1. Voter turnout and inequality

Voter turnout has been low and steadily declining, especially in the developed countries, throughout the last decades (e.g. Lijphart 1997). The average European voter turnout was around 85% up until the mid-80's, and has dropped a massive 10-15 percentage points ever since. This drop is partly due to the introduction of the ten Central-Eastern European (CEE) countries into the European community, but can also be observed within the Western-European states, although to a smaller extent, as well as within the CEE part of Europe (see 1. figure below and 10. figure in the appendix).

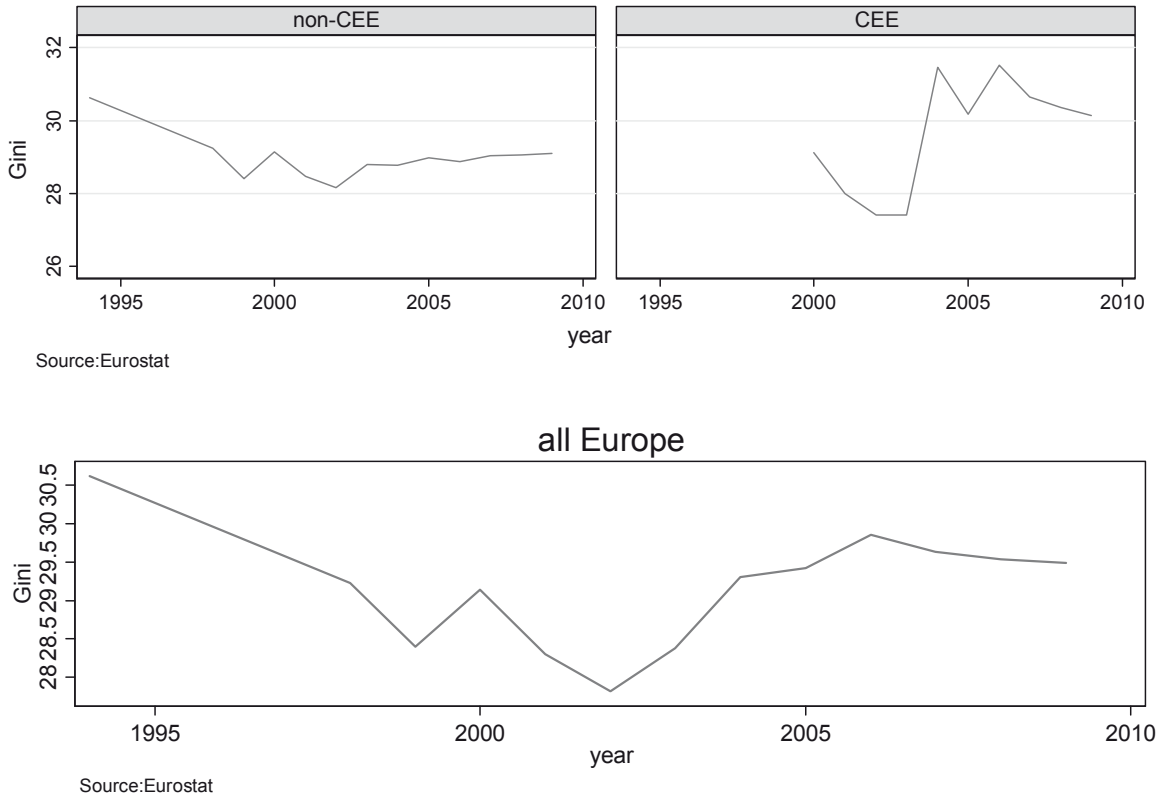
1. figure — Average voter turnout in European countries



Similarly, income inequalities have grown during the last couple of decades. This trend is observable in more than two-thirds of the OECD countries, independent of the utilized measure (OECD 2008). Income inequalities tend to fluctuate much less than voter turnout (see 2. figure below and 11. figure in the appendix). Also, it is questioned whether the observed variance of the indicators of inequality are due to the actual variance of social inequalities or rather due to measurement bias.

Nevertheless, both voter turnout and measures of income inequality vary considerably between countries. The argument that we should only observe income measures to change very little or very slowly would question the adequacy of time series models (unless data for a long period were available). But variance between countries offers the possibility to identify the relation between inequality and voter turnout using cross-country models.

2. figure – Average Gini coefficient in European countries

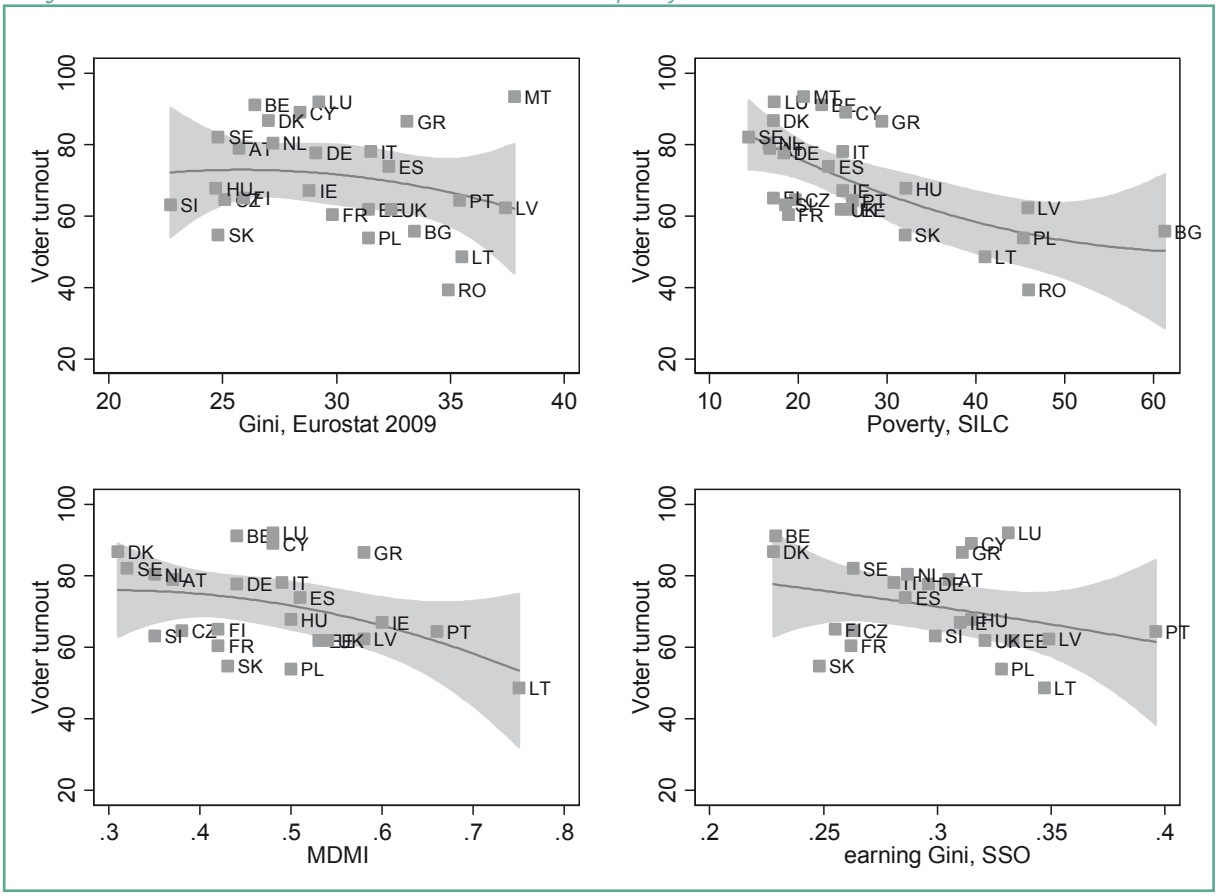


In order to minimize measurement bias, I use several indicators of inequality (see 2. table in the appendix). Beside the Eurostat's income Gini coefficient I use a Gini of earnings (SSO 2009), an s80/s20 ratio (SSO 2009), the mean distance from the median indicator of Lancee and van de Werfhorst (2011), a poverty rate from the Statistics on Income and Living Conditions (SILC) database and two p95/p5 measures, one from the Luxembourg Income Study (LIS) (Tóth and Keller 2011) and one from the SILC database. These all indicate overall income inequalities. I also look at inequalities above and below the median. I use the above and below the median MDMI indices (Lancee and van de Werfhorst 2011) and the p95/p50 and p50/p5 figures from the LIS and from the SILC databases (see 3. table in the appendix).

3. figure below shows the association between voter turnout and different measures of income inequalities. Apparently, the association is not very strong, and negative – if any.

This mild association is unsurprising if we consider that voter turnout is directly influenced by many factors, mostly unrelated to inequalities. Below I summarize the main driving forces of voter turnout and also present some hypotheses about the relation of inequality and turnout.

3. figure – the association between measures of income inequality and voter turnout



(source: European Election Study/Piredeu, Eurostat, SILC, Lancee-v.d.Werfhorst, SSO)

The most often used model to predict individual voter turnout is the Downsian rational voter model (Downs 1957). The model states that people decide whether they will vote or not based on an expected utility. The expected utility is the benefit from their choice (party) being the winner versus the disutility of another party being elected, multiplied by the probability of their vote being decisive and the costs of voting subtracted from this. The paradox of (not) voting is thus the fact that this "equation" is likely to be negative if many people vote (since the probability of a vote being decisive is almost nil, while the costs of voting is likely to be greater than zero), but if few people vote the expected utility is certainly positive (since the probability of a vote being decisive is great). Many resolutions for this paradox have been developed (see Geys 2006b for a comprehensive review). The addition of consumption benefit (Riker and Ordeshook 1968), taking ethical or altruistic preferences into account (Goodin

and Roberts 1975), the minimax regret strategy (Ferejohn and Fiorina 1974) or game theoretical approaches (Palfrey and Rosenthal 1983, 1985; Ledyard 1984) have all tried to address the paradox of voting. Indeed, the "pure" Downsian model of voting addresses the questions of marginal changes (why a middling person might vote) much better than the aggregate level of turnout (how many people vote) (Geys 2006b, p18).

Although using the Downsian framework it is hard to explain aggregate levels of turnout, there are several, empirically well documented factors that increase or decrease one's probability to cast a vote. Individual characteristics certainly matter: richer, more affluent people are much more likely to vote, just as higher education leads to a higher probability of voting (Lijphart 1997). The literature, understandably, is more occupied with country level factors that affect turnout. For instance Blais (2006) and Geys (2006a) both provide comprehensive reviews about these factors. Geys (2006a) clusters country level factors into three groups: socio-economic, political and institutional variables. Examples of socio-economic factors are population size, population concentration, population stability, population homogeneity or previous turnout level. Political variables can be the closeness (or marginality) of an election (i.e. how close the outcome of the election is), campaign expenditures, or political fragmentation. Institutional variables are the electoral system (majority, proportional representation or plurality voting), compulsory voting, concurrent elections, registration requirements… etc. Geys (2006a) in his review concludes that little agreement has been reached with many of the above factors. Institutional factors are the most consensual: compulsory voting, easier registration procedures, concurrent elections and proportional representation all foster higher turnout. Population size and electoral closeness also seem to be affecting turnout in general, although several of the analyzed papers had not found any link between them.

The review also notes that population heterogeneity (homogeneous groups within the society) seem to have no effect on turnout, although theoretically "as cohesion increases group solidarity (and 'social pressure'), political participation in communities with high degree of socio-economic, racial or ethnic *homo*geneity should be higher than in areas where this is not the case" (Geys 2006a p.644-645, emphasis in original). The question similar to population heterogeneity is in the focus of this paper as well, so this no-relationship finding is discouraging. However, the reviewed papers are mostly using a Herfindahl-Hirschmann concentration index to proxy heterogeneity, which is quite distant from the measures of inequality (used by this paper). Moreover, there are convincing new studies (e.g. Kaniovski and Mueller 2006; Yamamura 2009; Funk 2008) that argue that more heterogeneous communities

are less likely to vote, in line with the expectations of the group-based model (see Uhlaner 1989; Grossman and Helpman 2002; Filer, Kenny, and Morton 1993).

There are some studies that directly test the association of inequality and voter turnout. The most comprehensive study is Solt's (2010) testing the Schattschneider hypothesis (Schattschneider 1960). In his book, Schattschneider wrote that large economic inequalities lead to low participation rates as well as a high income bias in participation. "As the rich grow richer relative to their fellow citizens […] they consequently grow better able define the alternatives that are considered within the political system and exclude matters of importance to poor citizens" (Solt 2010 p.285) Hence poor will less likely to cast a vote, as inequality goes up, since their expected benefit from voting declines. Solt (2010) uses American gubernatorial elections data to test the association between turnout and inequality. He uses state level Gini coefficient calculated for three years (1980, 1990, 2000) to proxy income inequality, while voter turnout is also for these years. Solt shows that income inequality associates negatively with electoral participation, while higher income people tend to vote relatively more as inequality rises.

A similar conclusion is presented by Mueller ad Stratmann (2003), but with a different theoretical approach. They argue that if upper classes have higher participation rates than lower classes, and upper classes favor right of center parties, lower classes left of center parties, and right of center parties adopt policies that benefit the upper classes, while left of center parties adopt policies that favor the lower classes, then lower participation rates will lead to higher income inequalities. Hence their conclusion: voter turnout associates negatively with income inequality, but it is the decreasing participation rate that drives inequalities and not vice-versa. That is, their result is the same, but the line of argument is different from that of Schattschneider (1960). The Muller and Stratmann (2003) argument fits the Meltzer and Richard (1981) logic, namely that "when the mean income rises relative to the income of the decisive voter, taxes rise, and vice versa." If fewer people vote, then relatively more rich people vote, so median voter income will be larger (with mean income unchanged), which decreases taxes (preferences for redistribution is smaller).

One might also argue oppositely. Based on the Meltzer and Richard (1981) logic, if government decides only about the size of redistribution, then voter turnout should relatively be low if inequality is low, and turnout be high if inequality is high. When inequality is low, then poor people have little to gain, and rich little to lose if government redistributes, so why would they vote? Similarly if inequality is high, then poor have a lot to gain, and rich

have a lot to lose from redistribution, hence they will vote. This, of course, is an overly simplified argument not taking into account several other incentives driving one to vote.

While both Solt (2010) and Muller and Stratmann (2003) base the negative association of inequality and voter turnout on differences in participation rates between people with different incomes, Lister (2007) uses differences in social norms between countries to explain the negative association. He argues that the missing link (omitted variable) between inequality and turnout is institutions. Institutions affect social norms, which affect individual behavior. Universalist welfare states encourage solidarity and participation, and thus foster higher voter turnout than other types of welfare states. Nevertheless, his argument also leads to a negative relation between inequality and turnout: universal welfare states tend to have lower income inequalities and higher turnout.

The Downsian median voter logic, on the other hand, might lead one to argue in a different way. Growing inequalities might increase the probability of the lower income/ lower class people to influence politics more, if they can coalesce with the middle. In other words, if rising inequalities are due to rising income on the top, then the redistributive preferences of middle will be closer to the bottom than to the top; thus the middle might unite with the lower income/lower classes to "conquer" the upper classes. This would mean that higher inequality on the top would lead to a relatively higher turnout for the lower class/lower income. On the other hand, if rising income is due to a relatively decreasing income for the poor (as compared to the middle), then the coalition of the middle with the upper classes seem theoretically more likely (Lupu and Pontusson 2011). Hence, when looking at the relation between inequality and turnout one has to look not only at measures of general income inequality but also at differences between the bottom and the middle and the top.

1.1. Hypotheses

From the above literature I derive three separate hypotheses for testing:

1. Inequality associates negatively with voter turnout, ceteris paribus the other factors that are shown to influence turnout.
2. The reason for this negative association is that
    a. turnout for lower income people tend to be relatively smaller, when overall inequality is high (i.e. if inequality is high poor people tend to vote less, while rich tend to vote more, but this latter does not counterbalance the drop of "poor-votes"), or alternatively
    b. turnout for lower income people tend to be relatively smaller if inequality at the bottom is high, but turnout for lower income tend to be relatively higher if inequality on the top is high.

or

3. Universal welfare states have higher turnout as well as lower income inequality.

2. Data and method

I use the 2009 PIREDEU European Election Study (EES 2010; van Egmond et al. 2010) to test the association between inequality and turnout. The study was conducted right after the 2009 European parliamentary elections with the aim to research the EU elections. The main advantage of these surveys is that they contain all 27 European countries, with approximately 1000 responses from each. Besides the turnout measure it also contains a modest background questionnaire about individual characteristics, including education, gender and a subjective income measure (see below). The EES also provides substantial amount of data about the institutional system. The EES data was collected at one point in time in each country, thus the time since the last national election varies across countries, as a consequence the responses about actual turnout will also be differently overstated (people remember harder to an earlier election). 1. table below shows the participating countries and their aggregate voter turnout. The right column shows the actual turnout at the 2009 national elections. Unfortunately, the questionnaire did not have a question about actual turnout, but rather asked about the party vote. Nevertheless this question had the option "did not cast a vote" but many have refused to answer (e.g. in Italy, where voting is compulsory more than 26% of the voters did not answer), and also many had not remembered the action (e.g. in Latvia almost 20% did not know the answer). Nevertheless, I relied on those, who had definite answer; hence the turnout measure is those who voted over those who voted plus those who did not vote (*reported figure* column). Since surveys tend to overestimate the actual voter turnout – and as can be seen, differences between the reported and the official figures are sometimes substantial (e.g. Slovakia or Romania) – I used the ratio of the 2009 official/reported voter turnout ratio as weights in the estimations below.

1. table — Voter turnout, actual and observed

2009	REFUSED TO ANSWER	NOT VOTED	VOTED	NOT ELIGIBLE	DON'T KNOW	REPORTED FIGURE*	OFFICIAL FIGURE
AUSTRIA	13,60	2,90	77,60	1,30	4,60	0,96	0,79
BELGIUM	17,47	4,79	68,86	1,90	6,99	0,93	0,91
BULGARIA	10,60	19,80	56,80	2,20	10,60	0,74	0,56
CYPRUS	9,00	4,50	78,70	2,80	5,00	0,95	0,89
CZECH REPUBLIC	5,59	21,67	65,49	2,55	4,71	0,75	0,64
DENMARK	1,10	3,40	92,50	1,00	2,00	0,96	0,87
ESTONIA	3,57	19,86	64,15	2,48	9,93	0,76	0,62
FINLAND	4,80	8,10	76,40	1,80	8,90	0,90	0,65
FRANCE	16,40	7,70	61,70	3,50	10,70	0,89	0,60
GERMANY	12,75	5,48	71,41	3,39	6,97	0,93	0,78
GREECE	5,60	6,10	84,50	2,20	1,60	0,93	0,87
HUNGARY	11,24	14,53	69,75	1,19	3,28	0,83	0,68
IRELAND	5,39	6,79	74,53	3,50	9,79	0,92	0,67
ITALY	26,30	5,80	57,60	1,00	9,30	0,91	0,78
LATVIA	3,20	15,08	58,14	4,40	19,18	0,79	0,62
LITHUANIA	6,90	23,40	58,10	1,90	9,70	0,71	0,49
LUXEMBOURG	8,29	9,69	62,64	8,19	11,19	0,87	0,92
MALTA	30,90	2,50	60,80	2,00	3,80	0,96	0,93
NETHERLANDS	3,18	5,57	86,17	1,49	3,58	0,94	0,80
POLAND	4,29	22,65	62,97	2,20	7,88	0,74	0,54
PORTUGAL	14,60	8,80	65,00	4,40	7,20	0,88	0,64
ROMANIA	7,78	18,64	64,61	0,50	8,47	0,78	0,39
SLOVAKIA	6,50	14,86	69,78	2,46	6,40	0,82	0,55
SLOVENIA	8,30	7,60	76,60	0,80	6,70	0,91	0,63
SPAIN	10,90	8,30	76,80	1,60	2,40	0,90	0,74
SWEDEN	3,29	2,00	88,22	2,50	3,99	0,98	0,82
UK	6,80	11,60	73,40	3,50	4,70	0,86	0,62
MEAN	**9,56**	**10,46**	**70,49**	**2,47**	**7,02**	**0,87**	**0,74**

**voted/(voted+ not voted)*
source: European Election Study/Piredeu 2009.

The EES data allows for numerous individual controls. The base model (see 6. table in the appendix) includes individual level controls as well as country level controls. The individual controls are age, age squared, gender, age when the respondent finished education and a within country standardized "subjective standard of living".[1] Country level controls are compulsory voting, multiple election at the same time, size of population, existence of a threshold for a party to get in the parliament, electoral system (from proportional (0) to plurality (5)), presidential system, federalism, time since last national election (years), percentage of other nationalities, GDP as percentage

1 The question for the subjective standard of living was: „Taking everything into account, at about what level is your family's standard of living? If you think of a scale from 1 to 7, where 1 means a poor family, 7 a rich family, and the other numbers are for the positions in between, about where would you place your family?" Since the country mean for this question tend to correlate with income inequalities I standardized the answers within country (0 mean, 1 sd).

of mean EU 27. See all variables in the appendix 4. table and 5. table. I use all of these variables as controls in each of the estimations below.

I will use three types of models to test the association between inequality and voter turnout. A simple logit regression (1) with country clustered standard errors will be the base, a 2 step estimation (2) and a hierarchical model (3) will provide robustness checks for the logit model.

The logit model will be the following:

(1) $$Pr(V_{ic} = 1) = \alpha + \beta Y_{ic} + \gamma Z_c + \varepsilon_i$$

where *V* is the dummy for voting, *Y* is a factor of individual characteristics, while *Z* represents country level features including a measure of income inequality; *i* is an index for individual and *c* for country. α, β, γ are parameters to be estimated, while ε is an idiosyncratic error term.

Pooled-sample estimation with binary dependent variables struggle with stochastic specifications that differ across levels. In these cases Franzese (2005) suggests the researcher to consider the use of a 2 step estimation. In the 2 step estimation process I estimate a predicted probability for each respondent within each country separately in the 1st step, then I use the country means as the dependent variable in the 2nd step. That is, I estimate the

(2a) $$Pr(V_{ic} = 1) = \alpha + \beta Y_{ic} + \varepsilon_i$$

equation, and predict the probability of voting for a 40-year-old male voter, who went to school until age of 18, with mean standard of living. In order to correct for the different efficiency of the first step estimates I use the inverse standard deviation of the predicted probabilities as weight in the second step.

(2b) $$\text{PrVote} = \mu + \theta Z_c + u_c$$

where PrVote is the predicted country mean of voting. The theoretical difference between this approach and the logit model is that the 2 step estimation allows for different effects of the individual characteristics within countries, i.e. the 2 step is a more flexible model compared to the logit.

Finally, I estimate a hierarchical model, where respondents are nested in countries:

(3) $$\Pr(\mathrm{V_{ic}} = 1) = \alpha + \beta \mathrm{Y_{ic}} + \gamma \mathrm{Z_c} + \varepsilon_\mathrm{i} + \mathrm{u_c}$$

where u is a country level error term.

A big handicap of the 2 step estimation procedure is that it cannot handle interaction effects between individual and country level variables (by definition), and also that by predicting country means, I pre-define a group of people, whose turnout will be the dependent variable in the second step. When testing hypotheses 2 I have to use interaction terms: how the country level inequality affects the association between income and voter turnout. Within hierarchical models, as well as within simple logit models, the interaction can easily be done. 2 step estimation, on

the other hand, has its advantage as well. The results from the 2nd step can easily be depicted (see below), unlike the estimates of the logit or the hierarchical estimates.

3. Results

3.1. Declining turnout — hypothesis 1

The point estimates of the individual controls in the base model (6. table) are all as expected. Age associates with higher turnout but at a declining rate, years spent in school education also increases turnout, richer tend to vote more, and women are just as likely to vote as men, if all above socio-economic characteristics are controlled for. From the country level features fewer factors are significant. The existence of a threshold decreases turnout, and presidential systems also have fewer people to cast a vote, while federalist states have a higher turnout. Nevertheless, since these country level characteristics are not in the focus of the paper, I leave them in the models as controls, even if they do not significantly associate with turnout.

Tests for hypothesis 1 are in 7. table (logit), 8. table (2 step), and 9. table (hierarchical) in the appendix. All estimation procedures seem to provide the same results. Except the Eurostat Gini variable, and the s80/s20 ratio all income measures associate negatively with voter turnout, but very few are significant. Only the poverty rate shows significant association with the turnout across estimations, while the MDMI and the earnings Gini coefficients are

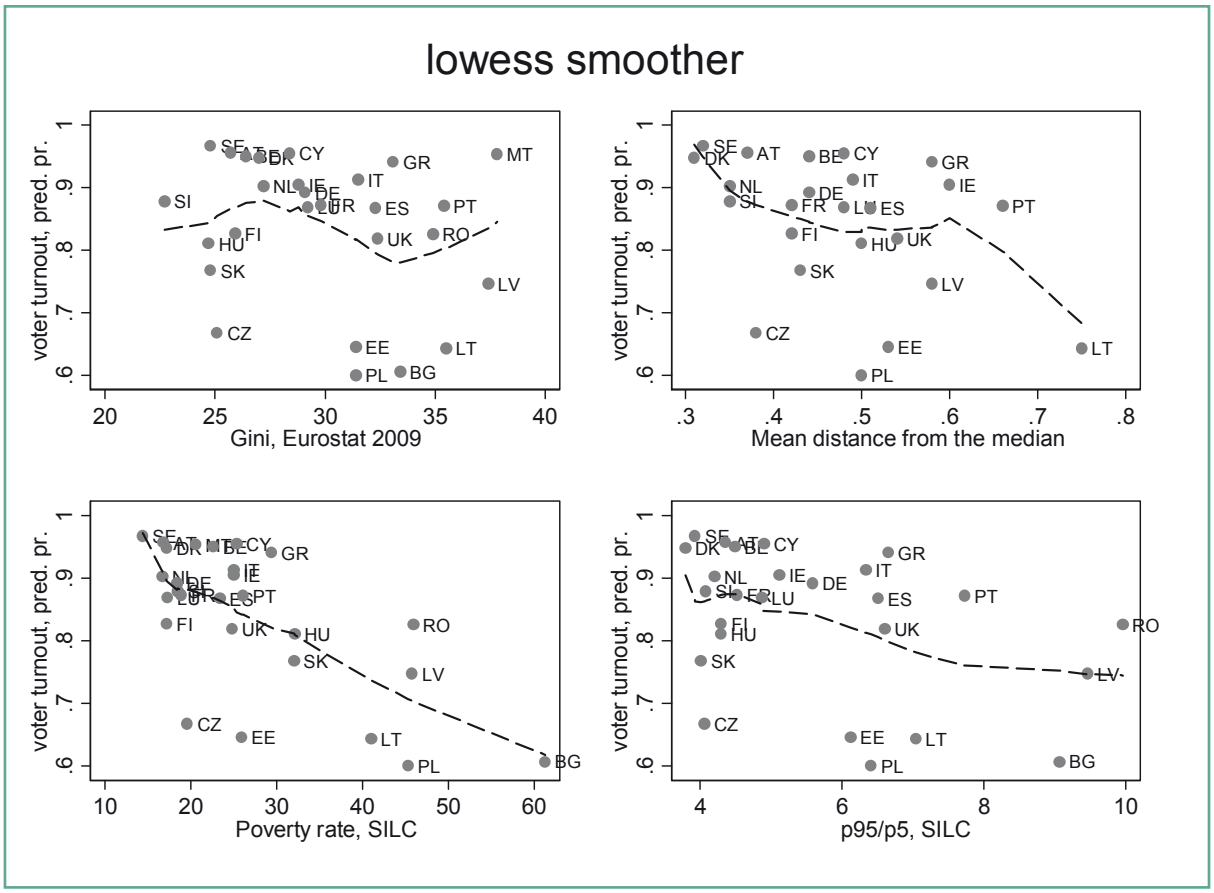
also weakly (10% or less) significant in all models. The other four proxies (income Gini, s80/s20 and the two p95/p5 ratios) are all insignificantly related to voter turnout.

However, if I consider that the models have taken into account several known influences of turnout, and that the number of countries are not very high I should conclude that these results are in line with the 1st hypothesis. It seems that inequality associates negatively with voter turnout, if we control for other factors which are claimed to influence turnout.

4. figure below depicts this association using the predicted probabilities from the 1st step of the 2 step procedure. It is apparent that the association between inequality and predicted voter turnout is not very strong, but negative. Especially the poverty rate associates closely with turnout, but all other indicators show a negative rather than a positive relation.

Nonetheless, the reason for this negative association is not straightforward. The hypotheses above could allow for three different reasons: a) turnout for the poor declines as inequality goes up, b) turnout for the rich declines as inequality goes up or c) there is no change in the relative turnout of the different income people but universal welfare states drive the results.

4. figure — Association of inequality with turnout — predicted probabilities from the 1st step estimates of the 2 step procedure



note: predicted probabilities are for a 40 year old man with average income, who finished education at age 18

3.2. Income bias — hypothesis 2a

Unfortunately the EES dataset does not contain an absolute measure of income or class. The income measure in the dataset is a subjective standard of living. The respondents place themselves within seven categories as compared to others in the society, and thus are endogenous with the inequality measures (e.g. the greater the inequality, the more people are likely to consider themselves poor). For this reason the interaction between the subjective standard of living and the inequality measure might be biased. The higher the inequality the more people tend to be poor (because it is a subjective / self evaluated measure). So a person, with similar probability of voting might consider herself poor in one country with high inequality and not poor in a country with low inequality. And vice-versa a person might consider herself rich in a low inequality country while not rich in a high inequality country, assuming identical turnout probabilities. Hence the effect of the interaction of income with inequality on turnout could be biased. Unfortunately the direction of the bias is also not clear. It depends on our assumption of inequality on the subjective evaluation of income. If average income people tend to "de-valuate" their income more in an unequal country than rich people, then the effect of income on voter turnout will be downwardly biased. But if rich

tend to look at themselves as lesser rich in an unequal country as compared to the subjective income "decline" of an average income person, then income effect on voting will be upwardly biased. So the direction of bias of subjective income on turnout will depend on the relative evaluation of income across income groups.

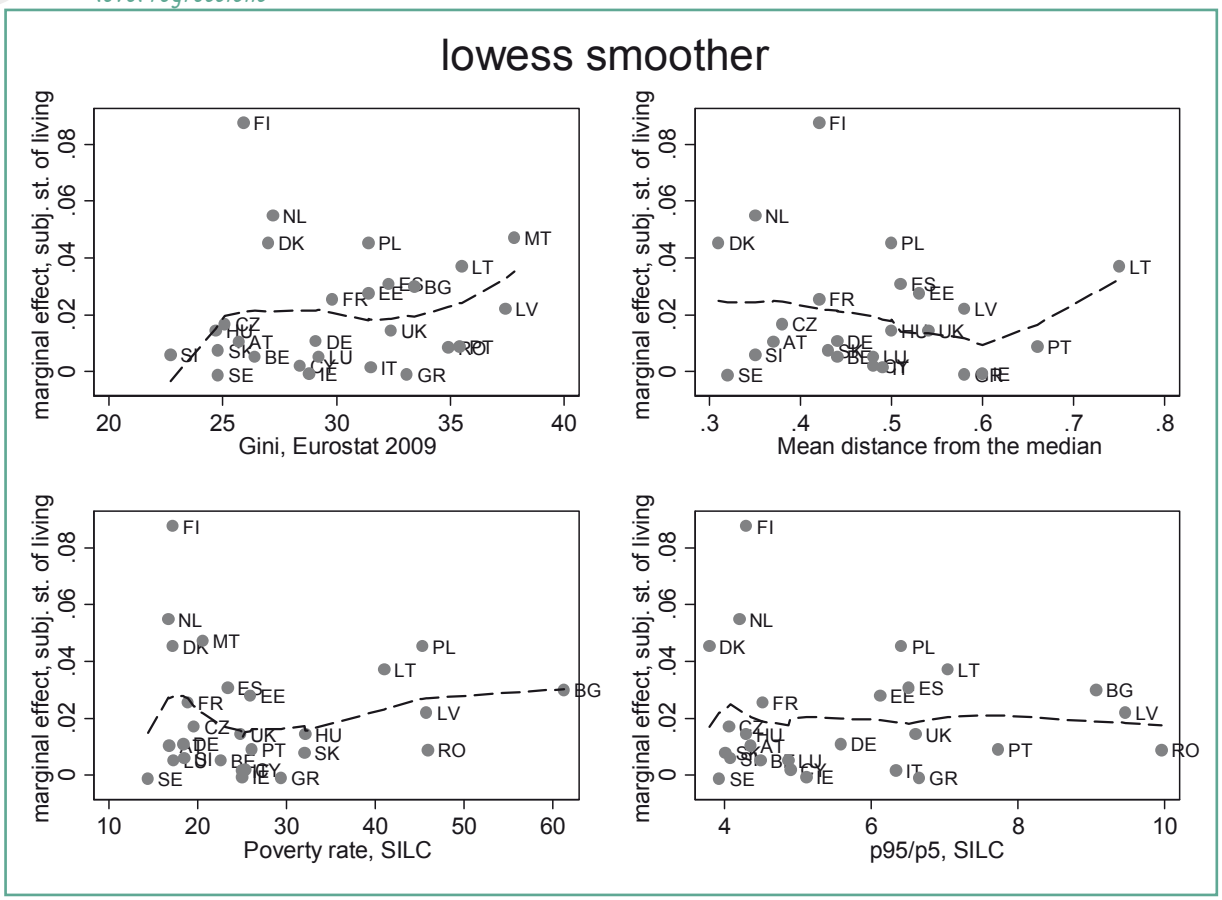
I could not find any suitable instrument that could solve this problem. I would need a variable that explains why one might consider herself poorer meanwhile being uncorrelated with voter turnout and only unconditionally correlated with inequality. Hence, the estimates of the interaction effect of lower income and inequality on turnout might be biased. In order to minimize bias I standardized the income proxy (subjective standard of living) within countries. By this, the cross-country correlation of the standardized income and the inequality measure will be zero, by definition. However, we do not rule out the fact that there will be more relatively poor people in higher income countries. Nevertheless, I believe that the size of this bias will be small (see argument about the direction of the bias), and thus only marginally affecting the substantial results.

The lack of absolute income could also be a problem if we assume that *absolute* income matters as well as *relative* income (see Solt 2010). Within the Downsian framework, the lack of absolute income might not be a problem, if we disregard the "hard" costs of voting: people vote more likely when the probability of their vote being decisive goes up; hence their *relative* position within the society matters. However, if we assume that absolute income matters as well – poorer people have troubles paying the costs of voting, e.g. traveling to the voting booth is costly – the point estimates will be biased, due to an omitted variable bias. Although I must make the assumption that absolute costs does not matter, I believe that in developed countries casting a vote is not very expensive.

10. table and 11. table in the appendix shows that the subjective standard of living does not associate significantly with voter turnout through increased inequality: richer people are not more likely to vote as inequality goes up. None of the interaction effects are significant, moreover their signs are also not consistently negative or positive.

Another way of looking at this income bias is to use the marginal effect if the subjective income on turnout from the 1st step estimation. 5. figure depicts the association of this marginal effect (estimated for the same 40 year old male schooled until age 18) with the different inequality measures. Apparently the same conclusion can be drawn: we cannot straightforwardly conclude that higher income people tend to vote more in more unequal countries.

5. figure— Income bias — association of inequality with the marginal effect of income (standard of living) from individual level regressions



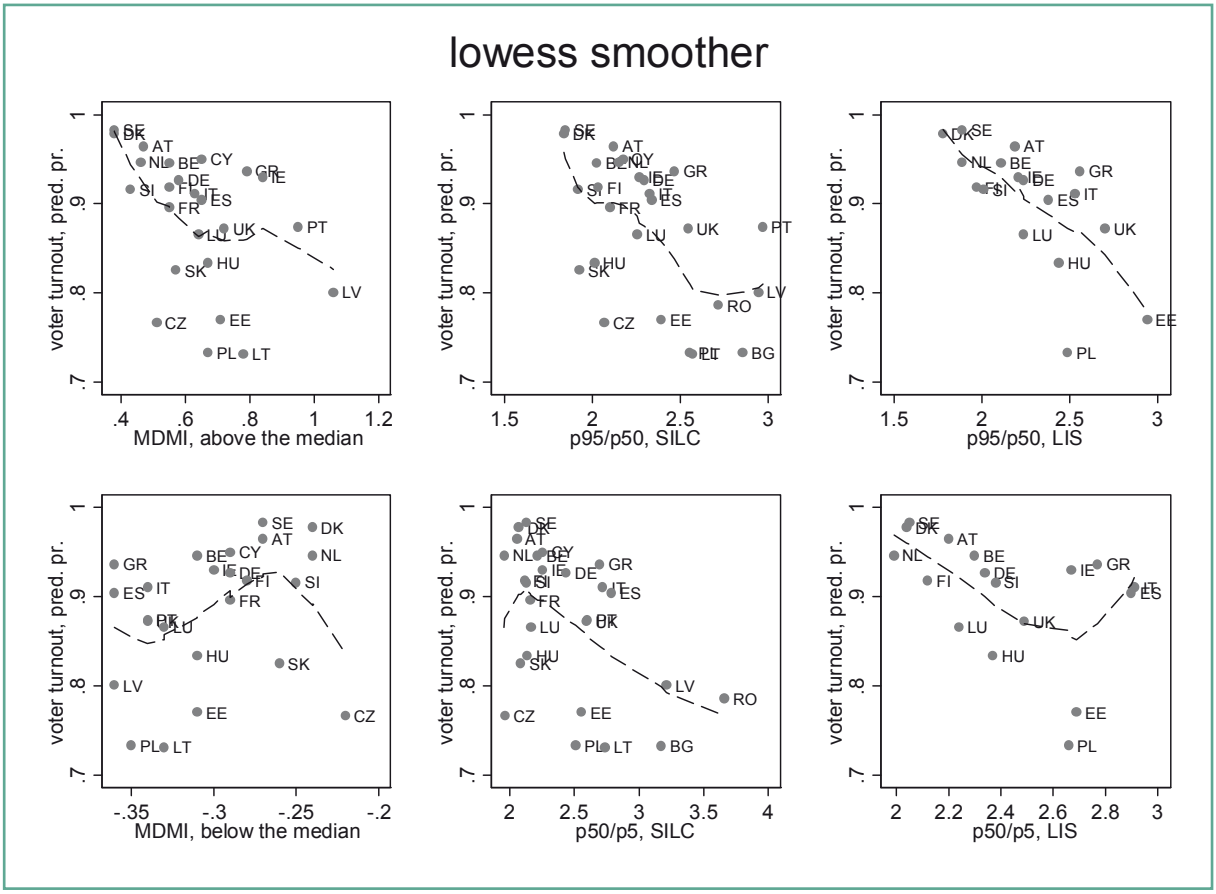
3.3. Inequality on the top and at the bottom — hypothesis 2b

12. table below shows the association between income inequality on the top and at the bottom with voter turnout. Results are not very robust, mainly due to the fact that the general indicators of inequality (MDMI and p95/p5), which can be separated along income distribution, are themselves poor explanators of turnout. Thus we see no strong association between inequality on the top and inequality at the bottom with voter turnout. However, the point estimates, as well as mild significance of the p95/p50 indicators and the p50/p5 LIS measure shows that higher inequality at the top associates with lower turnout, while higher inequality at the bottom goes together with higher turnout (or rather no association at all at the bottom). That is, the higher the difference between the very rich and the middle decreases overall turnout, while higher difference between the middle and the very poor does not change (or mildly increases) turnout. 13. table shows no indication of income effects at all. So the relative turnout of the rich and the poor, as shown by the interaction terms, does not change when inequality changes on the top or at the bottom. Although the point estimates are insignificant, they are against hypothesis 2b. i.e. richer people tend to vote more if inequality on the top is higher, while poorer tend to vote more if inequality at the bottom is higher.

This is just the opposite of what hypothesis 2b has assumed. These effects, however, are all insignificant, which might be due to the small number of countries, as well as the relatively unimportant effect of inequality.

This is also what we see in 6. figure below: the different measures of income inequality on the top and at the bottom associate mildly with the predicted probability of voter turnout. Inequality on the top tend to go weakly and negatively together with turnout, while inequality at the bottom has no relation with turnout.

6. figure - Association of inequality on the top and at the bottom with turnout — predicted probabilities from the 1st step estimates of the 2 step procedure

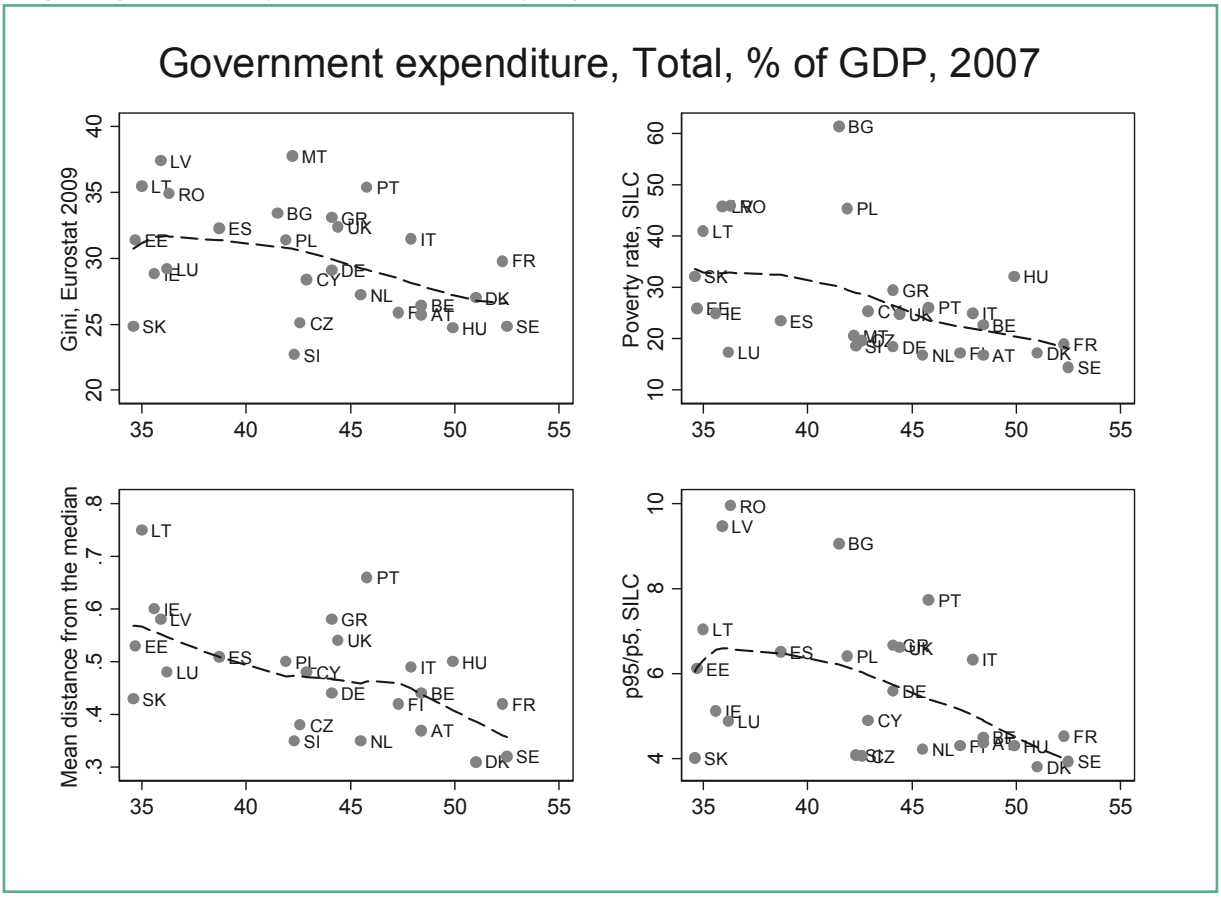


3.4. Universal welfare states — hypothesis 3

Although Lister (2007) uses the Gini coefficient to proxy universal welfare states – arguing that the lower the inequality the higher the state intervention is – for the purposes of this paper this proxy would obviously not be useful. Therefore, in order to test hypothesis 3, I have to use alternative measures of the welfare state. I will utilize government spending as percentage of GDP and government spending on social protection as percentage of GDP. Both are similar, but widely used measures for the size of state interventions, and thus for the welfare state (e.g. Esping-Andersen 1990). I assume that the larger the spending, the more universal the welfare state is. 7. figure and 8. figure below shows that government spending associates negatively with inequalities (the higher the spending

the lower the inequalities), as expected, and it also associates positively with voter turnout (8. figure and 9. figure). Thus Lister's (2007) argument could hold: we have observed that inequality associates negatively with turnout, and also that inequality associates negatively with the welfare state, which associates positively with turnout. Hence the link between inequality and turnout could indeed be driven by the welfare state. If universal welfare states are indeed an omitted variable, we should see the unbiased effect of income inequality on voter turnout after controlling for government spending.

7. figure – government expenditure vs. income inequality



14. table and 15. table shows the logit models, where the government spending and the government spending on social protection is included. Since there were no substantial differences between the results of the logit, the 2 step and the hierarchical estimations I show only the results from the logit regression for the tests of hypothesis 3.[2]

It is apparent that government spending has a not very strong but positive effect on turnout, ceteris paribus individual and other country level factors. If we accept that the size of government spending proxies welfare state entrenchment well, we can conclude that universal welfare states tend to foster voter turnout. However, the point estimates of the different inequality measures did not change significantly after including government spending.[3]

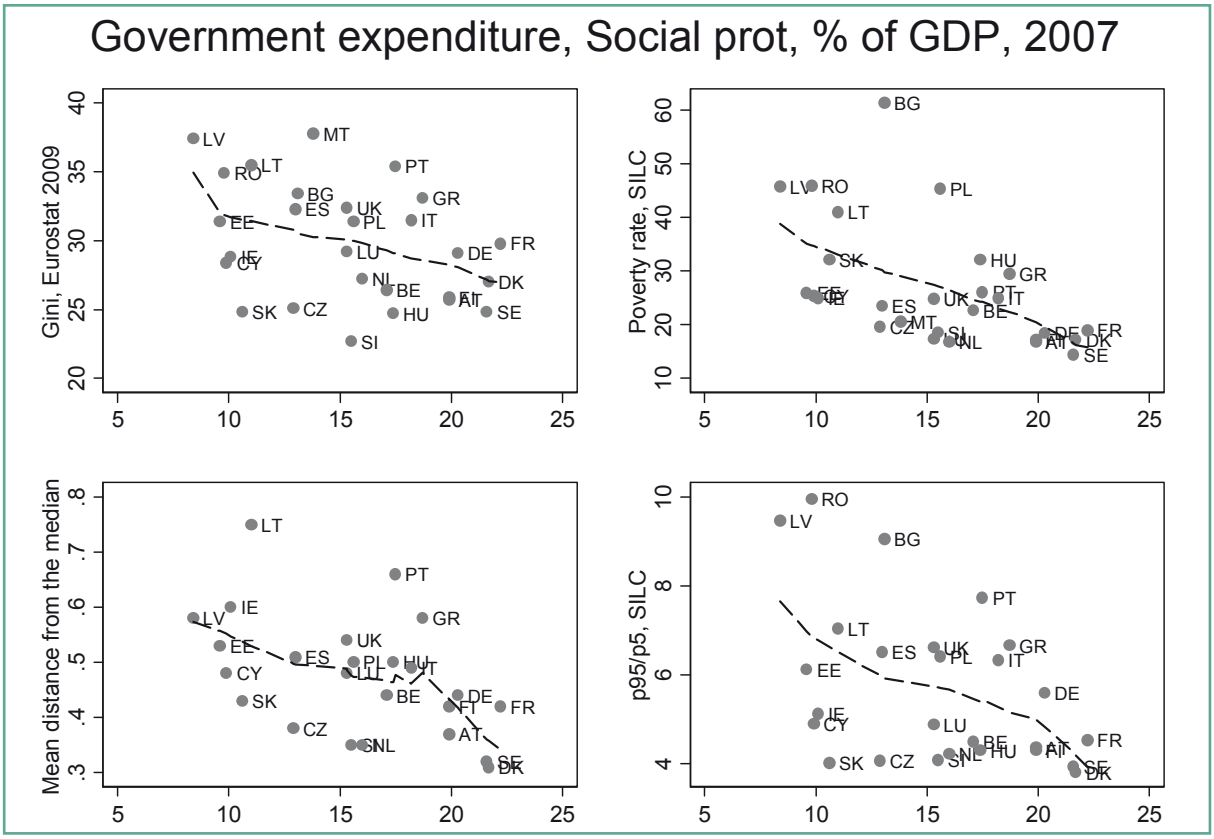
2 Results from the 2 step and hierarchical estimations were, again, almost identical – and could be requested from the author.

3 Only the p95/p5, LIS inequality indicator became significant but stayed negative after controlling for government spending on social protection (but controlling for the total spending did not have his effect), this is probably due to some outlier or high leverage case.

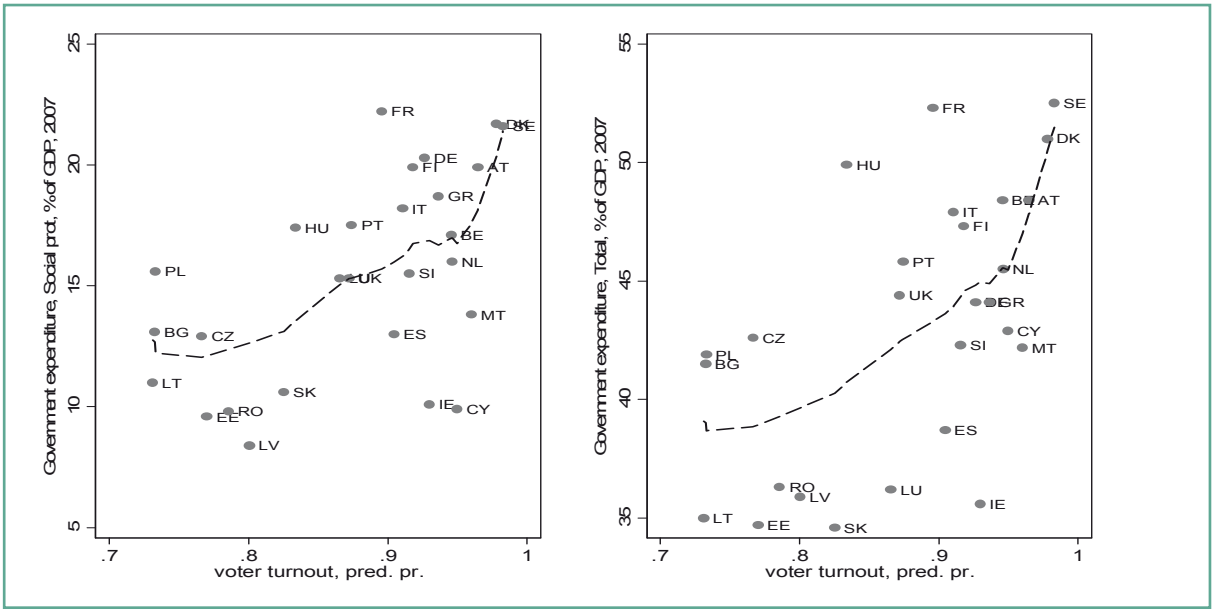
All indicators, but the Gini from the Eurostat, remained negative but lost a bit of significance, due probably to increased multicollinearity between the variables.

From this I conclude that although welfare states tend to have higher voter turnout, it does not seem to be the omitted variable that would explain the effect of inequality on turnout.

8. figure — government expenditure on social protection vs. income inequality



9. figure — Government expenditure vs. predicted turnout



4. Conclusion and further comments

The paper addressed the issue of the effect of inequality on voter turnout. Using the 2009 PIREDEU European Election Study dataset I tested three different hypotheses. These hypotheses were derived from previous literature. The analyses could show that inequality associates negatively with turnout at the national elections (hypothesis 1). This is not a very strong effect, but it is net of several factors affecting voter turnout that are empirically well proven – such as individual characteristics or different features of the political system. The literature suggests that this negative association is either due to the lower turnout of the poor relative to the rich in high inequality countries (hypothesis 2) or due to the effects of the universal welfare state, which increases turnout through altered social norms as well as decreases inequality through government intervention (hypothesis 3). None of these were really supported by the data. Although none of the hypotheses were refuted, I did not find significant association of the interaction effect of the individual income with inequality – i.e. income associates similarly with turnout in different inequality countries. Similarly, it seems that universal welfare states have a higher turnout, but this does not influence the association of inequality with turnout. I also tested whether inequalities at the top or at the bottom have a different affect on turnout. Although the results, again, are not very robust, it seems that larger differences in income between the very rich and the middle decreases overall turnout, while higher difference between the middle and the very poor increases turnout. This is just the opposite of what I have expected from the Downsian rational voter model.

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Appendix

2. table — indicators of overall iunequality

CNT	Gini Gini coeffi-cient, Euro-stat 2009 (source:SILC)	Gini Earning Gini of gross earnings in cash for full-time workers, SSO (Source: SILC)	s80/s20 s80/s20, SSO 2009 (Source: SILC)	MDMI Mean Distance from the me-dian (Lancee-v.d.Werfhorts 2011)	Poverty rate Population at risk of poverty or social exclu-sion, Eurostat 2005 (Ro-mania 2007, Bulgarian 2006)	p95/p5, LIS p95/p5, LIS (Tóth-Keller 2011)	p95/p5, SILC p95/p5, SILC 2007-2008 (Medgyesi)
AUSTRIA	25,7	0,321	3,658	16,8	16,8	4,8	4,4
BELGIUM	26,4	0,248	3,893	22,6	22,6	4,9	4,5
BULGARIA	33,4	0,331	6,459	61,3	61,3		9,1
CYPRUS	28,4	0,315	4,072	25,3	25,3		4,9
CZECH REPUBLIC	25,1	0,264	3,395	19,6	19,6		4,1
DENMARK	27,0	0,256	3,425	17,2	17,2	3,6	3,8
ESTONIA	31,4	0,319	4,869	25,9	25,9	7,9	6,1
FINLAND	25,9	0,275	3,709	17,2	17,2	4,2	4,3
FRANCE	29,8			18,9	18,9		4,5
GERMANY	29,1	0,330	4,540	18,4	18,4	5,2	5,6
GREECE	33,1	0,318	5,370	29,4	29,4	7,1	6,7
HUNGARY	24,7	0,322	3,557	32,1	32,1	5,8	4,3
IRELAND	28,8	0,334	4,395	25,0	25,0	5,9	5,1
ITALY	31,5	0,284	4,887	25,0	25,0	7,4	6,3
LATVIA	37,4	0,384	7,058	45,8	45,8		9,5
LITHUANIA	35,5	0,347	5,658	41,0	41,0		7,0
LUXEMBOURG	29,2	0,342	3,904	17,3	17,3	5,0	4,9
MALTA	37,8			20,6	20,6		
NETHERLANDS	27,2	0,309	3,739	16,7	16,7	3,8	4,2
POLAND	31,4	0,348	5,014	45,3	45,3	6,6	6,4
PORTUGAL	35,4	0,377	6,076	26,1	26,1		7,7
ROMANIA	34,9	0,295	6,966	45,9	45,9		10,0
SLOVAKIA	24,8	0,250	3,309	32,0	32,0		4,0
SLOVENIA	22,7	0,301	3,262	18,5	18,5	4,8	4,1
SPAIN	32,3	0,293	4,926	23,4	23,4	6,9	6,5
SWEDEN	24,8	0,305	3,321	14,4	14,4	3,9	3,9
UK	32,4	0,371	5,346	24,8	24,8	6,7	6,6

3. table — indicators of inequality above and below the median

CNT	MDMI, above median (Lancee–v.d.Werfhorts 2011)	p95/p50, LIS (Tóth–Keller 2011)	p95/p50, SILC (Medgyesi)	MDMI, below median (Lancee–v.d.Werfhorts 2011)	p50/p5, LIS (Tóth–Keller 2011)	p50/p5, SILC (Medgyesi)
AUSTRIA	0,47	2,19	2,122	–0,27	2,2	2,054
BELGIUM	0,55	2,11	2,027	–0,31	2,3	2,215
BULGARIA			2,855			3,174
CYPRUS	0,65		2,174	–0,29		2,254
CZECH REPUBLIC	0,51		2,070	–0,22		1,962
DENMARK	0,38	1,78	1,839	–0,24	2,04	2,068
ESTONIA	0,71	2,94	2,394	–0,31	2,69	2,557
FINLAND	0,55	1,97	2,035	–0,28	2,12	2,115
FRANCE	0,55		2,101	–0,29		2,156
GERMANY	0,58	2,24	2,296	–0,29	2,34	2,436
GREECE	0,79	2,56	2,469	–0,36	2,77	2,697
HUNGARY	0,67	2,44	2,012	–0,31	2,37	2,137
IRELAND	0,84	2,21	2,269	–0,3	2,67	2,255
ITALY	0,63	2,53	2,328	–0,34	2,91	2,721
LATVIA	2011,01,06		2,945	–0,36		3,215
LITHUANIA	0,78		2,574	–0,33		2,736
LUXEMBOURG	0,64	2,24	2,255	–0,33	2,24	2,163
MALTA						
NETHERLANDS	0,46	1,89	2,153	–0,24	1,99	1,956
POLAND	0,67	2,49	2,554	–0,35	2,66	2,512
PORTUGAL	0,95		2,971	–0,34		2,602
ROMANIA			2,719			3,661
SLOVAKIA	0,57		1,926	–0,26		2,086
SLOVENIA	0,43	2,01	1,919	–0,25	2,38	2,129
SPAIN	0,65	2,38	2,340	–0,36	2,9	2,784
SWEDEN	0,38	1,89	1,848	–0,27	2,05	2,130
UK	0,72	2,7	2,546	–0,34	2,49	2,595

4. table – —country level indicators 1

CNT	Multiple (concurrent) elections	Compulsory voting	Threshold	Elect. System: Proportional (0) vs. plurality (5)	Presidential system	Federalism
AUSTRIA	0	0	0	3	3	1
BELGIUM	0	1	0	3	0	1
BULGARIA	0	0	1	3	3	0
CYPRUS	0	1	0	3	1	0
CZECH REPUBLIC	0	0	1	3	0	0
DENMARK	1	0	0	3	0	0
ESTONIA	0	0	0	3	0	0
FINLAND	0	0	0	3	0	0
FRANCE	0	0	1	1	2	0
GERMANY	0	0	1	4	0	1
GREECE	0	1	0	3	0	0
HUNGARY	0	0	1	4	0	0
IRELAND	0	0	0	5	3	0
ITALY	0	0	0	3	0	0
LATVIA	0	0	1	3	0	0
LITHUANIA	0	0	1	2	3	0
LUXEMBOURG	1	1	0	3	0	0
MALTA	0	0	0	5	0	0
NETHERLANDS	0	0	0	3	0	0
POLAND	0	0	1	3	3	0
PORTUGAL	0	0	0	3	3	0
ROMANIA	0	0	0	4	3	0
SLOVAKIA	0	0	1	3	0	0
SLOVENIA	0	0	0	3	3	0
SPAIN	0	0	0	3	0	0
SWEDEN	0	0	1	3	0	0
UK	0	0	0	0	0	0

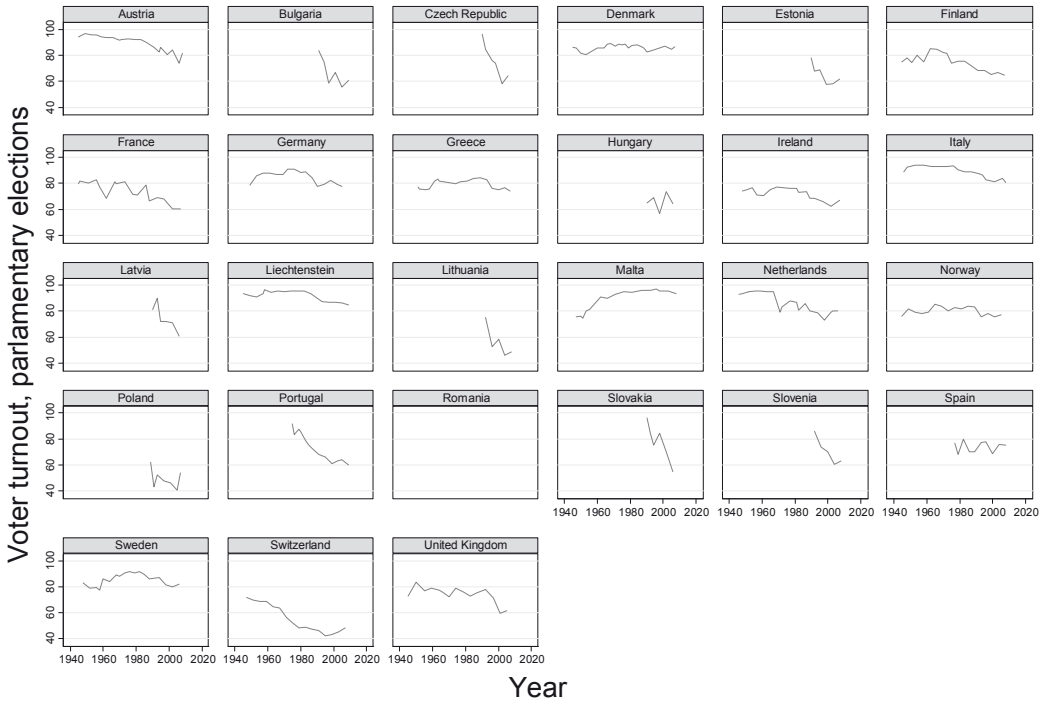
Source: European Election Study/Piredeu 2009

5. table — country level indicators 2

CNT	Years from national election (own research)	Total population, 2008	GDP, per capita, % of EU 27 (Eurostat)	Government expenditure, Total, % of GDP, 2007	Government expenditure, Social protection, % of GDP, 2007
AUSTRIA	3,25	8318592	124	48,4	19,9
BELGIUM	1,00	10666866	116	48,4	17,1
BULGARIA	0,08	7640238	44	41,5	13,1
CYPRUS	1,92	789269	98	42,9	9,9
CZECH REPUBLIC	0,92	10381130	82	42,6	12,9
DENMARK	2,42	5475791	121	51	21,7
ESTONIA	1,75	1340935	64	34,7	9,6
FINLAND	1,83	5300484	113	47,3	19,9
FRANCE	0,30	63982881	108	52,3	22,2
GERMANY	0,42	82217837	116	44,1	20,3
GREECE	0,75	11213785	93	44,1	18,7
HUNGARY	0,83	10045401	65	49,9	17,4
IRELAND	1,92	4401335	127	35,6	10,1
ITALY	2,84	59619290	104	47,9	18,2
LATVIA	1,33	2270894	52	35,9	8,4
LITHUANIA	3,00	3366357	55	35	11
LUXEMBOURG	0,00	483799	271	36,2	15,3
MALTA	2,75	410290	81	42,2	13,8
NETHERLANDS	1,00	16405399	131	45,5	16
POLAND	2,42	38115641	61	41,9	15,6
PORTUGAL	0,42	10617575	80	45,8	17,5
ROMANIA	3,42	21528627	46	36,3	9,8
SLOVAKIA	1,00	5400998	73	34,6	10,6
SLOVENIA	3,34	2010269	88	42,3	15,5
SPAIN	2,75	45283259	103	38,7	13
SWEDEN	1,25	9182927	118	52,5	21,6
UK	0,92	61179256	112	44,4	15,3

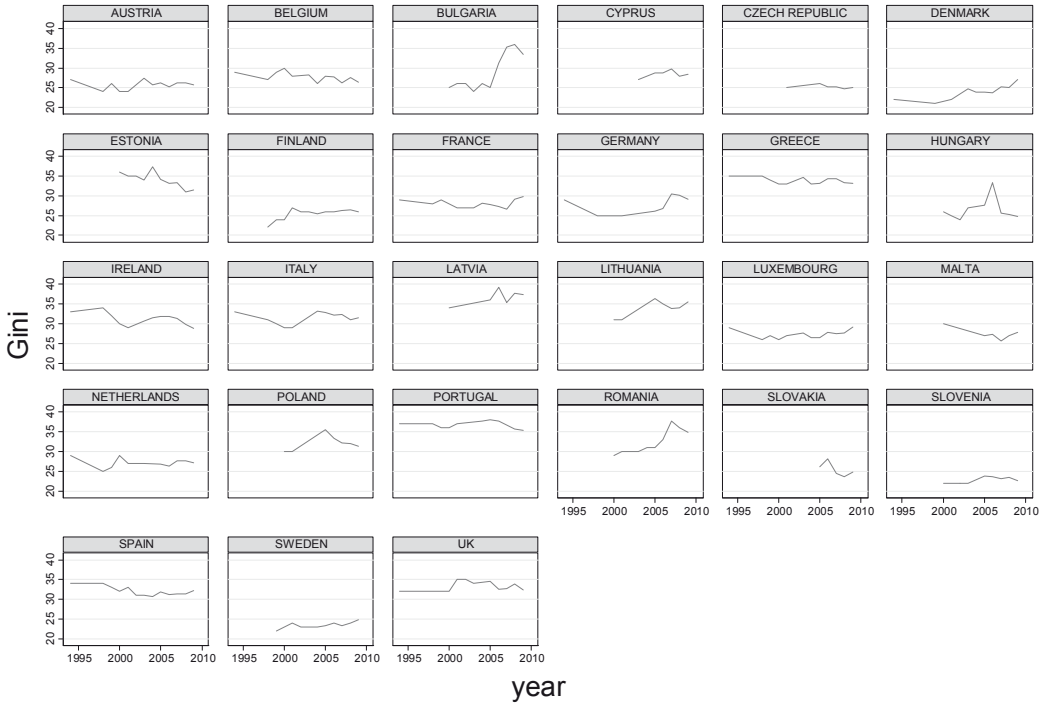
Source: European Election Study/Piredeu 2009, unless otherwise noted

10. figure — Voter turnout in European countries



Source:IDEA

11. figure — income Gini coefficient of European countries



Source:Eurostat

6. table — Logit Base model (ORs)

VARIABLES	(1) vote=1
Age	1.089**
	(0.0124)
Age squared	1.000**
	(0.000120)
Female	1.040
	(0.0629)
Age when finished education	1.056**
	(0.0149)
Subjective standard of living	
(within country Z-score)	1.196**
	(0.0320)
Compulsory voting	1.308
	(0.284)
Multiple (concurrent) elections	0.731
	(0.583)
Population	1.000
	(4.21e-09)
Threshold	0.500**
	(0.128)
Elect. System: Proportional (0) vs. plurality (5)	1.053
	(0.0913)
Presidential	0.847*
	(0.0680)
Federalism	1.772*
	(0.427)
Years from national election	1.076
	(0.0761)
% of other nationalities	0.970+
	(0.0173)
GDP per capita, % of EU27	1.004
	(0.00522)
Constant	0.142*
	(0.112)
Observations	20,202

Odds ratios, robust clustered se in parentheses,
*** p<0.01, * p<0.05, + p<0.1*

7. table — Different measures of income inequality on turnout, logit (ORs)

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE	(7) VOTE
Subjective standard of living (within country Z-score)	1.194**	1.186**	1.203**	1.201**	1.198**	1.204**	1.190**
	(0.0315)	(0.0316)	(0.0347)	(0.0338)	(0.0318)	(0.0430)	(0.0318)
Gini, Eurostat 2009	1.017						
	(0.0268)						
s80/s20, SSO 2009		1.041					
		(0.170)					
Gini, earning, SSO 2009			0.982*				
			(0.00702)				
Mean distance from the median				0.218+			
				(0.180)			
Poverty rate, SILC					0.976+		
					(0.0129)		
p95/p5, LIS						0.751	
						(0.338)	
p95/p5, SILC							0.942
							(0.0816)
Constant	0.0852*	0.138+	0.249	0.181+	0.251	0.861	0.157+
	(0.105)	(0.147)	(0.215)	(0.177)	(0.218)	(1.581)	(0.157)
Observations	20,202	18,964	20,202	18,112	20,202	12,979	19,603

Robust seeform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

8. table — Different measures of income inequality on turnout, 2 step

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Predicted probabiliya, 2nd step						
Gini, Eurostat 2009	0.000854						
	(0.00541)						
s80/s20, SSO 2009		0.00224					
		(0.0332)					
Gini, earning, SSO 2009			-0.00174				
			(0.00168)				
Mean distance from the median				-0.338			
				(0.217)			
Poverty rate, SILC					-0.00608*		
					(0.00265)		
p95/p5, LIS						-0.0400	
						(0.0711)	
p95/p5, SILC							-0.00779
							(0.0167)
Constant	0.792**	0.831**	0.864**	0.875**	0.943**	1.024*	0.849**
	(0.192)	(0.170)	(0.137)	(0.136)	(0.127)	(0.376)	(0.153)
Observations	27	25	27	24	27	17	26
R-squared	0.575	0.602	0.603	0.648	0.685	0.627	0.587

Standard errors in parentheses, a – for a 40 year old average income men, who finished education at age 18
*** p<0.01, * p<0.05, + p<0.1*

9. table — Different measures of income inequality on turnout, hierarchical logit (ORs)

VARIABLES	(1) Vote	(2) Vote	(3) Vote	(4) Vote	(5) Vote	(6) Vote	(7) Vote
Gini, Eurostat 2009	1.007						
	(0.0346)						
s80/s20, SSO 2009		0.944					
		(0.165)					
Gini, earning, SSO 2009			0.979+				
			(0.0121)				
Mean distance from the median				0.0943+			
				(0.114)			
Poverty rate, SILC					0.964*		
					(0.0141)		
p95/p5, LIS						0.713	
						(0.291)	
p95/p5, SILC							0.895
							(0.0803)
Constant	0.166	0.272	0.380	0.306	0.501	0.986	0.300
	(0.207)	(0.262)	(0.327)	(0.273)	(0.415)	(2.091)	(0.265)
Random effects parameters							
sd(Constant)	0.529**	0.507**	0.499**	0.474**	0.473**	0.458**	0.499**
	(0.0795)	(0.0799)	(0.0758)	(0.0770)	(0.0718)	(0.0911)	(0.0774)
Observations	20,202	18,964	20,202	18,112	20,202	19,603	19,603
Number of groups	27	25	27	24	27	26	26

seEform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

10. table — Income bias, logit (ORs)

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE	(7) VOTE
Subjective standard of living (within country Z-score)	1.029	0.773	1.011	1.118	1.223*	1.239	1.182
	(0.130)	(0.122)	(0.157)	(0.0987)	(0.0986)	(0.189)	(0.186)
Gini, Eurostat 2009	1.018						
	(0.0269)						
* standard of living	1.005						
	(0.00428)						
s80/s20, SSO 2009		1.042					
		(0.170)					
* standard of living		1.006					
		(0.0188)					
Gini, earning, SSO 2009			0.982*				
			(0.00726)				
* standard of living			0.998				
			(0.00236)				
Mean distance from the median				0.222+			
				(0.184)			
* standard of living				1.155			
				(0.202)			
Poverty rate, SILC					0.976+		
					(0.0129)		
* standard of living					0.999		
					(0.00256)		
p95/p5, LIS						0.750	
						(0.338)	
* standard of living						0.995	
						(0.0252)	
p95/p5, SILC							0.942
							(0.0819)
* standard of living							1.001
							(0.0125)
Constant	0.0833*	0.137+	0.251	0.179+	0.252	0.866	0.156+
	(0.103)	(0.146)	(0.218)	(0.175)	(0.219)	(1.593)	(0.158)
Observations	20,202	18,964	20,202	18,112	20,202	12,979	19,603

Robust seeform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

11. table – income bias, hierarchical logit (ORs)

VARIABLES	(1) VOTE	(3) VOTE	(5) VOTE	(7) VOTE	(9) VOTE	(11) VOTE	(13) VOTE
Subjective standard of living (within country Z-score)	1.057	0.775	1.046	1.147	1.274**	1.231	1.228**
	(0.176)	(0.194)	(0.207)	(0.136)	(0.0772)	(0.190)	(0.0945)
Gini, Eurostat 2009	1.008						
	(0.0346)						
* standard of living	1.005						
	(0.00545)						
s80/s20, SSO 2009		0.944					
		(0.166)					
* standard of living		1.003					
		(0.0189)					
Gini, earning, SSO 2009			0.979+				
			(0.0121)				
* standard of living			0.998				
			(0.00316)				
Mean distance from the median				0.0959+			
				(0.116)			
* standard of living				1.139			
				(0.265)			
Poverty rate, SILC					0.964*		
					(0.0141)		
* standard of living					0.999		
					(0.00179)		
p95/p5, LIS						0.713	
						(0.291)	
* standard of living						0.999	
						(0.0251)	
p95/p5, SILC							0.895
							(0.0803)
* standard of living							0.998
							(0.0120)
Constant	0.162	0.271	0.385	0.303	0.505	0.988	0.300
	(0.202)	(0.261)	(0.331)	(0.270)	(0.418)	(2.095)	(0.265)
Random effects parameters							
	0.529**	0.507**	0.499**	0.474**	0.474**	0.458**	0.499**
	(0.0795)	(0.0799)	(0.0758)	(0.0769)	(0.0719)	(0.0911)	(0.0774)
Observations	20,202	18,964	20,202	18,112	20,202	12,979	19,603
Number of groups	27	25	27	24	27	17	26

seEform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

12. table – Different measures of income inequality below and above the median on turnout, logit (ORs)

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE
MDMI, BELOW THE MEAN	2.357					
	(7.290)					
P50/P5, LIS		17.76**				
		(17.43)				
P50/P5, SILC			0.880			
			(0.342)			
MDMI, ABOVE THE MEDIAN				0.466		
				(0.409)		
P95/P50, LIS					0.102+	
					(0.134)	
P95/P50, SILC						0.550+
						(0.191)
CONSTANT	0.108+	0.000592**	0.160	0.108*	27.45	0.382
	(0.142)	(0.00119)	(0.229)	(0.0977)	(74.54)	(0.467)
OBSERVATIONS	18,112	12,979	19,603	18,112	12,979	19,603

ROBUST SEEFORM IN PARENTHESES
** P<0.01, * P<0.05, + P<0.1

13. table – Income bias, below and above the median, logit (ORs)

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE
SUBJECTIVE STANDARD OF LIVING						
(WITHIN COUNTRY Z-SCORE)	1.006	1.271	1.195	1.160*	1.198	1.102
	(0.162)	(0.432)	(0.156)	(0.0846)	(0.267)	(0.174)
MDMI, BELOW MEDIAN	2.174					
	(6.760)					
* STANDARD OF LIVING	0.566					
	(0.315)					
P50/P5, LIS		17.66**				
		(17.83)				
* STANDARD OF LIVING		0.980				
		(0.138)				
P50/P5, SILC			0.880			
			(0.344)			
* STANDARD OF LIVING			0.998			
			(0.0520)			
MDMI, ABOVE THE MEDIAN				0.469		
				(0.412)		
* STANDARD OF LIVING				1.051		
				(0.108)		
P95/P50, LIS					0.102+	
					(0.134)	
* STANDARD OF LIVING					1.004	
					(0.0900)	
P95/P50, SILC						0.552+
						(0.193)
* STANDARD OF LIVING						1.035
						(0.0715)
CONSTANT	0.105+	0.000600**	0.160	0.108*	27.40	0.378
	(0.140)	(0.00124)	(0.230)	(0.0971)	(74.71)	(0.465)
OBSERVATIONS	18,112	12,979	19,603	18,112	12,979	19,603

Robust seeform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

14. table — welfare state test 1 — logit (ORs)

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE	(7) VOTE
Government expenditure, Total, % of GDP, 2007	1.075*	1.067*	1.070*	1.059+	1.065+	1.098+	1.068*
	(0.0345)	(0.0343)	(0.0319)	(0.0360)	(0.0353)	(0.0592)	(0.0330)
Gini, Eurostat 2009	1.023						
	(0.0258)						
s80/s20, SSO 2009		0.981					
		(0.133)					
Gini, earning, SSO 2009			0.986+				
			(0.00832)				
Mean distance from the median				0.551			
				(0.576)			
Poverty rate, SILC					0.986		
					(0.0131)		
p95/p5, LIS						0.990	
						(0.326)	
p95/p5, SILC							0.957
							(0.0744)
Constant	0.00259**	0.00695**	0.0101**	0.00850*	0.0113*	0.000777*	0.00709**
	(0.00507)	(0.0126)	(0.0164)	(0.0174)	(0.0208)	(0.00276)	(0.0120)
Observations	20,202	18,964	20,202	18,112	20,202	12,979	19,603

Robust seeform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

15. table — welfare state test 2 - logit

VARIABLES	(1) VOTE	(2) VOTE	(3) VOTE	(4) VOTE	(5) VOTE	(6) VOTE	(7) VOTE
Government expenditure,							
Social prot, % of GDP, 2007	1.104*	1.108*	1.098+	1.076	1.091+	3.773**	1.101*
	(0.0515)	(0.0541)	(0.0539)	(0.0543)	(0.0567)	(0.603)	(0.0511)
Gini, Eurostat 2009	1.009						
	(0.0247)						
s80/s20, SSO 2009		0.897					
		(0.128)					
Gini, earning, SSO 2009			0.986+				
			(0.00733)				
Mean distance from the median				0.300			
				(0.252)			
Poverty rate, SILC					0.983		
					(0.0130)		
p95/p5, LIS						0.106**	
						(0.0387)	
p95/p5, SILC							0.931
							(0.0754)
Constant	0.0241**	0.0351**	0.0538**	0.0528*	0.0572*	1.51e-10**	0.0385**
	(0.0314)	(0.0425)	(0.0599)	(0.0698)	(0.0726)	(4.13e-10)	(0.0444)
Observations	20,202	18,964	20,202	18,112	20,202	12,979	19,603

Robust seeform in parentheses
*** p<0.01, * p<0.05, + p<0.1*

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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

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