To have or not to have:

Effects of economic inequality on turnout in European democracies

Abstract

The effect of economic inequality on turnout has received considerable interest recently. Some studies suggest that inequality depresses turnout, others that the relationship is either the other way around or simply non-existent. Employing a large dataset with some 80,000 respondents from 30 European democracies, we show that great care is required when exploring inequality and turnout. On average, there is indeed a negative/positive effect of being below/above the median income in a country – but it is conditioned by inequality (measured as the Gini coefficient) and national wealth (measured as GDP per capita). Moreover, the two country-level factors interact in surprising ways. Based on our results we warn against claims of mono-causal relationships between the economic situation of voters and turnout.

Key words: turnout, vote abstention, inequality, Gini coefficient, GDP per capita, European Social Survey

1. Introduction

The literature on inequality and turnout is old. Goodin and Dryzek (1980) suggest that when individuals become relatively worse off, their likelihood of voting decreases as they are less likely to be able to influence politics. Others propose a more resource-oriented argument with the effect of inequality seeing a lack of interest in politics among the poor (Brady et al., 1995: 283). Either way, inequality should lead to lower turnout, especially among the poor. Meltzer and Richard (1981) propose a different model where increasing inequality entails higher turnout: the so-called conflict theory. The basic logic is that as inequality rises the middle class has greater incentives to vote to induce governments to redistribute more from the rich.

In recent years the effects of economic inequality on citizens' likelihood to vote have attracted considerable research attention, but with somewhat mixed results. Several studies have shown that inequality depresses turnout not least among the poor (e.g., Anderson and Beramendi, 2008; Solt, 2008; 2010). Others find a negative effect of inequality (Oliver, 2001: 79; Jamie-Castillo, 2009), while others still find no highly conditional or counter-intuitive effects (e.g., Horn, 2011; Stockemer and Scruggs, 2012; Smets and van Ham, 2013; Stockemer and Parent, 2014; Kasara and Suryanarayan, 2014).

A shortcoming of the existing work is that it does not fully explore the role of all the major potentially relevant material factors at the same time. For one thing, the importance of the relative position of an individual in the income distribution can be argued to be a function of both the position of the individual in the income distribution and the shape of that income distribution. In all countries individuals are scattered across the income distribution: Some are among the poorest 10 per cent (i.e. in the first decile), others are among the richest 10 per cent (i.e. in the 10th decile), while the rest fall in between depending on their earnings. This is a universal feature of all societies, assuming that they are not fully equal, which none are. Yet, in some countries the richest 10 per cent are closer to the poorest 10 per cent than in other

countries. For instance, in Sweden the rich are far closer to the poor than is the case in the UK. The overall distribution of income is, in other words, different in different countries.

The difference between an individual's relative position in the income distribution and the shape of that distribution is not trivial (and has been discussed previously in the literature, cf. Anderson and Beramendi, 2008; Solt, 2008). Perhaps it is the relative income alone that matters, because the feeling of inability to affect politics through voting comes about simply from being less well-off than other members of society. This lack of efficacy may or may not be amplified by the overall distribution. After all, if a society is more equal, the individuals occupying the, say, third decile will objectively be, and perhaps also feel, closer to those in the 10th. Likewise, the rich in a very unequal society will have more to fight for, assuming that the feeling of being advantaged has an inherent value to those at the top.

To complicate things neither the relative position of an individual in the income distribution nor the shape of that distribution relates to the general wealth of the society. In wealthier societies those in the first decile will, all else equal, have more to spend than those in the first decile. If the rich are motivated by their fear of redistribution to turn out and vote in bigger numbers than their poorer fellow citizens, one may expect this to be a particularly salient concern in wealthy societies, since this would imply that the rich have more to lose. Much the same logic potentially applies to arguments stressing lack of resources among the disadvantaged. In richer societies being comparably less well-off may matter less, as one in fact still has a lot of the resources necessary for participation.

That said, obviously, it may also matter how a society's wealth is distributed. The UK, for instance, is a wealthy country with a GDP per capita *on par* or above most other European democracies; however, the distribution of that wealth is highly skewed. Importantly, not all countries are like that. Denmark has a GDP per capita close to the British, but a much more equal distribution. Clearly, if both the distribution of income and the level of national wealth

matter, they are likely to interact. How they do so will, however, depend on whether inequality and national wealth depress or enhance turnout among the less well-off.

Assuming that inequality depresses turnout among the poor, we can discern two scenarios. In one scenario the two *amplify* each other. In highly unequal and wealthy countries the poor may not only be comparably worse off than the poor in more equal countries, but the rich may, at the same time, have even more resources, augmenting the distance between the rich and the poor in such countries. In another scenario the two factors *counter-balance* each other. The poor in unequal, but wealthy countries may have more relevant resources and, hence, a greater likelihood of voting than the poor in unequal and poor countries. If we, on the other hand, assume that inequality enhances turnout, our expectations change accordingly. In the conflict perspective of Meltzer and Richard, more inequality and greater national wealth mean that the poor have even more to fight for, which should boost turnout. If national wealth or inequality drops, so will turnout among the poor, because their incentives to vote decrease. Essentially, of course, it is an empirical question which of these effects will prevail.

2. Methods

2.1. Data

To explore these issues both country-level data and individual-level data is incorporated in a cross-national research design. The analyses are based on data from the 2002-2010 European Social Survey and supplemented with country-level variables from World Development Indicators from the World DataBank. Our data contains information about some 80,000 respondents from 30 European countries[1] over the course of five waves of surveys. While

[1] Austria (2002-2006), Belgium (2002-2010), Bulgaria (2006, 2010), Switzerland (2002-2010), Cyprus (2006, 2010), Czech Republic (2002, 2004, 2008, 2010), Germany (2002-2010), Denmark (2002-2010), Estonia (2008, 2010), Spain (2002-2010), Finland (2002-2010), France (2004-2010), Great Britain (2002-2010), Greece (2002,

earlier studies have mainly tested their hypotheses on rich Western countries, our sample includes a small group of less developed Eastern European countries. The European Social Survey, more importantly, contains the best cross-national measure of household income in existence today, allowing for an exact grouping of respondents into deciles (cf. below). This is vital for us, as we are interested in the effect of relative income.

2.2. Main variables of interest

The dependent variable in this study is turnout at the individual level, and it measures whether an individual voted at the last national election. Studies sometimes use intended voting; however, that measure is subject to potential social desirability effects, where respondents are inclined to answer that they will vote even though they ultimately do not (e.g., Holbrook and Krosnick, 2010). Since we expect to see an overrepresentation of the relatively poor among non-voters, it is plausible that over-reporting will occur disproportionally in this group. This, in turn, would mean that the effect of relative income would be unduly muted. Actual voting behaviour is, in our opinion, less likely to be subject to the same degree of social desirability effects, assuming that most respondents are more hesitant to misrepresent retrospective facts. However, it is essential to keep in mind that our dependent variable, too, may have a tendency to underestimate the effect of relative income. Comparing the level of self-reported voting with the last national election reveals over-reporting of between two and 16 per cent.[2]

2004, 2008, 2010), Croatia (2008, 2010), Hungary (2004, 2008, 2010), Ireland (2004-2010), Israel (2002, 2008, 2010), Italy (2002, 2004), Luxembourg (2002, 2004), the Netherlands (2002-2010), Norway (2002-2010), Poland (2002-2010), Portugal (2002-2010), Russia (2006-2010), Sweden (2002-2010), Slovenia (2002-2010), Slovakia (2004, 2006, 2010), Turkey (2004, 2008, 2010), and Ukraine (2008, 2010).

[2] One problem with making such an assessment is that it is not always clear what election the respondents were thinking about when answering the question. This means that we should be very careful about being too assertive about exactly how much over-reporting is going on. There are also four countries with instances of under-

The main independent variables in the analyses are inequality, national wealth, and relative income of the individual respondent. To capture the latter, a 10-point scale is created placing individuals in income deciles. The variable is merged between two variables, one measuring the household's total net income (for the surveys collected in 2002-2006), and the other measuring the household's total income, after tax and compulsory deductions, from all sources (for the surveys collected in 2008-2010). The income scale is then recoded to measure the distance to the specific countries' median income with a view to identifying whether the individual income falls above or below the median income category. The variable is thus scaled from -4 to 5, where -4 is the fourth decile below the median income category. To get a hold on the potential non-linearity of the effect of this variable on odds for participation, a variable squaring the distance to the median income variable is included. By specifying our relative income measure like this, we replicate Anderson and Beramendi's (2008) approach.

Inequality is measured using the Gini coefficient of the disposable household income per equivalent adult and is derived from the SWIID dataset (version 4.0). SWIID is developed by Solt (2009) and standardizes different measures of income inequality to conform more closely to the standard set by the Luxembourg Income Study. The variable ranges from 0 to a theoretical maximum of 100, where 0 is no inequality. The actual scores range between 22 (Slovenia in 2002) and 37.8 (Portugal in 2004). The Gini coefficient is the standard measure of societal inequality in the large bulk of empirical studies surveyed above. National wealth is measured as GDP per capita and calculated in 1,000 of US dollars. We do not log-transform the variable, because various tests clearly indicate that doing so will not produce a better fit in

reporting. This may be a function of a misunderstanding about what national election was meant in the questionnaire, or some other factor we cannot observe. Yet, excluding these four instances from the estimations reported below does not alter the substantial conclusions, though it does make some of the associations a bit stronger.

the estimations. We thus stick to the original measure, which is much easier to interpret. The country scores range between 10.5 (Bulgaria in 2006) and 65.8 (Luxembourg in 2004). Although national wealth is not always included in studies of turnout, GDP per capita is a conventional measure of wealth in a society.

2.3. Control variables

In order to estimate the unbiased effect of inequality on probability of voting, variables at individual and country levels are included in the model, since they are expected to influence both the main independent and dependent variables. Furthermore, variables that are only expected to affect the dependent variables are included in order to reduce the standard error of the main independent variable. In addition to these country- and individual-level variables, time dummies are included in order to control for potential effects across time, including the influence of economic shocks.

At the individual level a set of variables measuring socioeconomic resources is included. The respondent's number of years of education is included as one of the main control variables, with the expectation that participation is strengthened by education. Variables measuring the respondent's sex, age, and marital status are also included, since these factors have previously been shown to affect participation. The effect of age may be expected to be curvilinear with the youngest and oldest being least likely to participate. In addition to these socioeconomic variables, a number of attitudinal variables are included in the model, including life satisfaction, interpersonal trust, and trust in institutions. These variables help to model capture the real effect of income by diminishing the part of the variation that is unrelated to income and income inequality, since the decision to participate has to do with confirming the political system's legitimacy or expressing one's personal inclinations to be a socially active individual. We also control for both political interest and ideological self-

placement. Yet, since these variables are much closer to the dependent variable than the other individual-level controls, we do not include them in the main analysis reported below. Doing so, however, does not alter the results reported in any substantial way.

At the national level a variable measuring a country's level of economic growth (i.e. annual percentage of GDP growth) is included in addition to GDP per capita alongside a disproportionality index from Gallagher and Mitchell (2005: 511-532) measuring characteristics of the electoral system in the form of compulsory voting rules and disproportionality. Table 1 recaps the definition, measurement, and source of all variables together with key summary statistics.[3]

[Table 1 about here]

2.4. Estimation

In order to estimate the effects of inequality, national wealth, and relative income both logit and multilevel models are used. Logit models will be applied to analyze the main effects on participation, while multilevel models will be implemented mainly as a test of the robustness of the estimated models. The choice of logit models allows the estimation of the effects on dichotomous dependent variables, such as individual voting. These models are all estimated using robust standard errors, but the results are reproduced using traditional standard errors. Otherwise no alterations are made to the logit models as a consequence of tests of the model assumptions and specifications. All regression tables are reported in the supplementary

[3] In principle, compulsory voting rules could bias our results because they, by design, increase turnout. However, there are very few cases of compulsory voting in our data, so we do not integrate this into the main analysis. Yet, controlling for compulsory voting reduces the baseline estimate of the distance to the median income level only slightly from 0.085 to 0.082.

material. As noted, we pool all waves of the European Social Survey. However, re-running the estimations wave by wave does not change the results reported here. We have also re-run the estimations in a multilevel logistic setup, again without changing the substantial results reported below.

3. Results

We begin by estimating the baseline relationship between relative income and probability of voting, including the controls presented in section 2.3. The estimated coefficient is positive and significant ($\beta = 0.085$; $p < 0.001$, cf. Model 1 in Table S1 in the supplementary material). Figure 1 displays the predicted probability of voting across the income distribution. It is immediately clear that turnout is strongly affected by relative income. The predicted probability is 73 per cent in the first decile, and 84 per cent in the 10th. As this is before interacting with national-level variables, this is a rather noteworthy finding. The results are pretty much in line with the findings of Anderson and Beramendi (2008) and Solt (2008), respectively.

[Figure 1 about here]

Before moving on, we note that our controls perform as expected. Age has a curvilinear effect on turnout, i.e. turnout increases with age and begins to decrease later on. Education is strongly correlated with voting, as is being married and satisfied with life and having a high degree of trust in institutions and others in general. Being unemployed, unskilled, or a skilled worker decreases the tendency to vote, as does living in a country with a highly disproportionate political system. Hence, the coefficients of the control variables suggest a sound model.

Next we turn to the conditioning effect of an unequal income distribution, measured by the Gini coefficient. The estimated interaction term is negative and significant ($\beta = -0.011$; $p < 0.001$), indicating that the effect of relative income decreases with increasing inequality. However, the model hides some even more interesting variations. Table 2 reports the predicted probability of voting when relative income and inequality are at their minimum, mean, and maximum levels, respectively. The minimum value of relative income is the first decile, the mean is the fifth decile, and the maximum is the 10th decile – this feature is by construction invariant across countries. In our sample of countries Norway, Denmark, Slovenia, and Sweden stand out with a small Gini coefficient; Germany, France, and Poland with a medium Gini coefficient; and Turkey, Romania, Portugal, and the UK with a high Gini coefficient. When the Gini coefficient is at its mean (28.88), relative income has roughly the same positive inclination as in Figure 1. Moving from the first decile to the 10th increases the predicted probability with 14 percentage point (compared to 11 percentage points in Figure 1) from 70.91 per cent to 84.94 per cent. If the Gini coefficient is at its minimum (22.50), the inclination is even bigger, going from a predicted probability of 64.48 per cent to 88.44 per cent, or a dramatic increase of 24 percentage points. In contrast, when the Gini coefficient is at its maximum (45.45), relative income actually has a *negative* rather than a positive effect on turnout. Over the range of the income distribution the probability of voting drops 12 percentage points.

[Tables 2 and 3 about here]

The next step is to gauge the interaction between relative income and national wealth, measured as the GDP per capita (see Model 4 in Table S1 in the supplementary material). Again there is a significant interaction term ($\beta = 0.003$; $p < 0.001$). In this model the

interaction term is positive, indicating that the effect of relative income increases with increasing wealth. Again this masks a lot of variation. This is best seen in Table 3, which reports the predicted probabilities across minimum, mean, and maximum values of relative income and GDP per capita. Contrary to the Gini coefficient, high levels of GDP per capita never make the positive effect of relative income on the probability of voting flip into a negative correlation. However, the size of the positive gradient varies greatly depending on a country's wealth: When GDP per capita is at its minimum the difference in probability of voting between the poorest and the richest segments of society is only around four percentage points, while it is a full 31 percentage points when GDP per capita is at its maximum. It is interesting that this increasing inclination is caused by those with a relatively low income to vote less in very rich countries. Clearly, being relatively poor in an affluent country does not make you vote.

One explanation of this somewhat paradoxical finding is that a wealthy country may also be a very unequal country. The UK and the US are examples of rich countries with high levels of inequality. To see how societal inequality and wealth play together we have regressed a three-way interaction with relative income *x* Gini coefficient *x* GDP per capita on turnout – still with the full set of controls, as previously. The three-way interaction term is significant ($\beta = 0.0002$; $p < 0.001$), as are the three underlying two-way interactions (cf. Model 5 in Table S1). To get a sense of how this complex relationship manifests itself, Table 4 reports the predicted probability of voting across combinations of minimum, mean, and maximum levels of relative income, Gini coefficient, and GDP per capita, respectively. In the supplementary material we also report the marginal effects of relative income conditional on the Gini coefficient at high (Figure A1), medium (Figure S2), and low (Figure S3) levels of national wealth.

[Table 4 about here]

Several striking features stand out. The relative income of individuals matters most in two diametrically opposed situations: when both the Gini coefficient and GDP per capita are low or when both are high. When both inequality and wealth are at their minimum, the difference in probability of voting between the poorest and the richest segments of society is 24.55 percentage points. And when both are at their maximum, the difference is 22.03 percentage points. The latter finding is probably the least surprising. This is the scenario found in a wealthy country – like the UK or the US – with high inequality: The poor do not benefit from their country's wealth, precisely because of the highly unequal distribution of wealth, and lag even further behind the well-off than the poor in less unequal societies.

It seems evident that an identical explanation cannot account for the equally large effect of relative income in countries with both low inequality and wealth. It is possible to speculate that the large effect of relative income in this scenario reflects the fact that poor voters have very few resources and very little to fight for in terms of additional redistribution, given that inequality is already low, whereas the rich have both the resources and incentives to fight pervasive redistribution. Ukraine and Slovakia are real-life examples from our dataset that come close to this. This may explain why the importance of relative income declines when societal wealth increases, since the poor in this situation of low inequality do get a comparably large share of the wealth and, hence, obtain the resources to participate. Countries like Denmark, Norway, and Sweden are good examples of such a situation. It may also explain why the positive effect of relative income declines, and even turns negative, when inequality rises, because increasing inequality gives the poor something to fight for.

4. Discussion

Turnout is driven by a very diverse set of factors, as the recent meta-analyses by Geys (2006) and Smets and van Ham (2013) document. One factor that has received special attention in the past 10 years or so is economic inequality, but the results have not been conclusive. We believe that our results support the argument that inequality on average reduces individuals' propensity to vote (e.g., Goodin and Dryzek, 1980; Anderson and Beramendi, 2008; Solt, 2008; 2010). The lower an individual's income, compared to the rest of society, the less likely the individual is to vote, all else equal. This baseline effect is often amplified, if the income distribution itself is relatively skewed towards the rich. Crucially, these are no more (but also no less) than *average* effects. If we look below these average effects, a much more fragmented picture emerges. We aimed to demonstrate that it is not possible to study the effect of inequality without also taking into account the effect of national wealth. Doing so certainly makes it clear that things are not very straightforward, statistically speaking; and it may clarify why several studies have failed to find an unambiguous effect of inequality on turnout.

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Table 1. Summary information on important variables included in the analysis

	Variable	Specific measurement	Mean	Standard deviation	Min.	Max.
Independent variables	Relative income	Distance to median income	1.370	2.533	-4	5
	Inequality	Gini coefficient	28.88	4.784	22.50	45.44
	Wealth	GDP per capita	28,980	9,369	6,029	65,824
Dependent variable	Vote	Voted at last national election (dummy)	0.798	0.402	0	1
Control variables	Relative income squared		.798	.402	0	25
	Age		44.46	50.78	14	123
	Age squared		4,555	51,425	196	15,129
	Education		13.634	6.187	0	56
	Female		.465	.499	0	1
	Married		.206	.405	0	1
	Satisfaction with life		6.997	2.173	0	10
	Trust in people		5.233	2.405	0	10
	Trust in institutions		4.895	1.936	0	10
	Unskilled worker		.060	.2375	0	1
	Skilled worker		.129	.336	0	1
	Unemployed		.099	.299	0	1
	Disproportionality index		5.325	4.343	.72	21.95
	Growth in wealth		2.381	2.266	-4.943	9.363

Figure 1. The effect of relative income on probability of voting

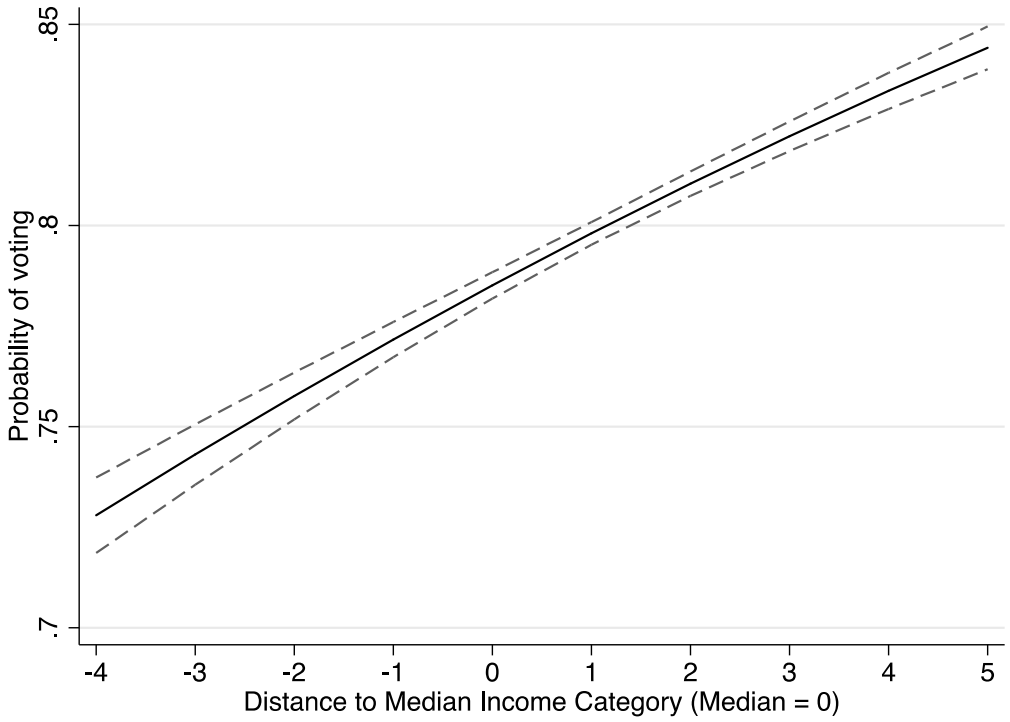

Table 2. Predicted probabilities of voting across relative income and Gini coefficient

		Relative income		
		Minimum	Mean	Maximum
Gini coefficient	Minimum	64.48 %	80.95 %	88.44 %
	Mean	70.91 %	80.04 %	84.94 %
	Maximum	84.13 %	77.53 %	72.14 %

Table 3. Predicted probabilities of voting across relative income and GDP per capita

		Relative income		
		Minimum	Mean	Maximum
GDP per capita	Minimum	80.97 %	83.42 %	84.94 %
	Mean	71.58 %	79.82 %	84.35 %
	Maximum	52.43 %	72.98 %	83.37 %

Table 4. Predicted probabilities of voting across relative income, Gini coefficient, and GDP per capita

				Relative income			
				Minimum	Mean	Maximum	Max.-Min.
Gini coefficient	Minimum	GDP per capita	Minimum	65.66 %	82.87 %	90.21 %	24.55 %-points
			Mean	67.42 %	81.56 %	88.20 %	20.78 %-points
			Maximum	70.14 %	79.31 %	84.28 %	14.14 %-points
	Mean	GDP per capita	Minimum	75.64 %	83.84 %	88.07 %	12.43 %-points
			Mean	70.1 %	79.58 %	84.67 %	14.57 %-points
			Maximum	60 %	71.24 %	77.72 %	7.77 %-points
	Maximum	GDP per capita	Minimum	91.91 %	86.18 %	80.73 %	-11.18 %-points
			Mean	76.47 %	73.79 %	71.88 %	-4.59 %-points
			Maximum	31.91 %	44.77 %	53.94 %	22.03 %-points

Supplementary material

Table S1. Logit and multilevel models in predicting the propensity to vote

	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**
	Logit	Multilevel	Logit with interaction	Logit with interaction	Logit with three-way interaction
Relative income	0.085***	0.012***	0.018	0.425***	0.528***
	(0.005)	(0.001)	(0.012)	(0.022)	(0.058)
Relative income squared	-0.001	-0.001*	-0.004*	-0.004**	-0.005**
	(0.001)	(0.000)	(0.002)	(0.001)	(0.002)
Inequality (Gini coefficient)	0.002	0.001	0.001	0.006*	0.041***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.005)
Wealth (GDP per capita)	-0.012***	-0.002	-0.015***	-0.013***	0.038***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.007)
Growth in wealth (GDP per capita)	-0.051***	-0.000	-0.056***	-0.054***	-0.060***
	(0.005)	(0.001)	(0.005)	(0.005)	(0.005)
Age	0.041***	0.006***	0.041***	0.042***	0.042***
	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
Age squared	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Education (years)	0.017***	0.002***	0.017***	0.018***	0.019***
	(0.003)	(0.000)	(0.003)	(0.003)	(0.003)
Female	0.036	0.011***	0.038*	0.040*	0.045*
	(0.019)	(0.003)	(0.019)	(0.019)	(0.019)
Married	0.350***	0.046***	0.341***	0.342***	0.347***
	(0.033)	(0.005)	(0.033)	(0.032)	(0.033)
Satisfaction with life	0.034***	0.006***	0.035***	0.033***	0.034***
	(0.005)	(0.001)	(0.005)	(0.005)	(0.005)
Trust in people	0.022***	0.005***	0.022***	0.021***	0.022***
	(0.004)	(0.001)	(0.004)	(0.004)	(0.004)

Trust in institutions	0.173***	0.025***	0.173***	0.168***	0.165***
	(0.006)	(0.001)	(0.005)	(0.006)	(0.006)
Unskilled worker	-0.135**	-0.059***	-0.130**	-0.192***	-0.183***
	(0.045)	(0.006)	(0.045)	(0.045)	(0.045)
Skilled worker	-0.303***	-0.067***	-0.298***	-0.298***	-0.254***
	(0.029)	(0.004)	(0.029)	(0.029)	(0.029)
Unemployed	-0.255***	-0.066***	-0.254***	-0.254***	-0.254***
	(0.029)	(0.005)	(0.029)	(0.029)	(0.029)
Disproportionality index	-0.034***	0.001	-0.034***	-0.029***	-0.025
	(0.002)	(0.001)	(0.002)	(0.002)	(0.005)
2002	Reference	Reference	Reference	Reference	Reference
2004	0.029	-0.012*	0.030	0.019	0.018
	(0.034)	(0.005)	(0.034)	(0.034)	(0.034)
2006	0.166***	0.010	0.164***	0.156***	0.165***
	(0.038)	(0.006)	(0.038)	(0.039)	(0.039)
2008	0.092**	0.025***	0.110**	0.106**	0.103**
	(0.035)	(0.007)	(0.035)	(0.035)	(0.035)
2010	0.009	0.004	0.040	0.035	0.036
	(0.035)	(0.006)	(0.035)	(0.035)	(0.035)
Relative income *x* societal inequality				-0.011***	
				(0.001)	
Relative income *x* wealth			0.003***		
			(0.000)		
Relative income *x* wealth *x* societal inequality					0.0002***
Constant	-1.115***	0.322***	-1.052***	-1.235***	-2.288***
	(0.104)	(0.054)	(0.104)	(0.105)	(0.181)

N	80,858	80,858	80,858	80,858	80,858
Pseudo R^2	0.086	0.080	0.087	0.089	0.090

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Tests of significance are based on two-sided tests.

Figure S1. The marginal effects of relative income conditional on the Gini coefficient at high levels of national wealth

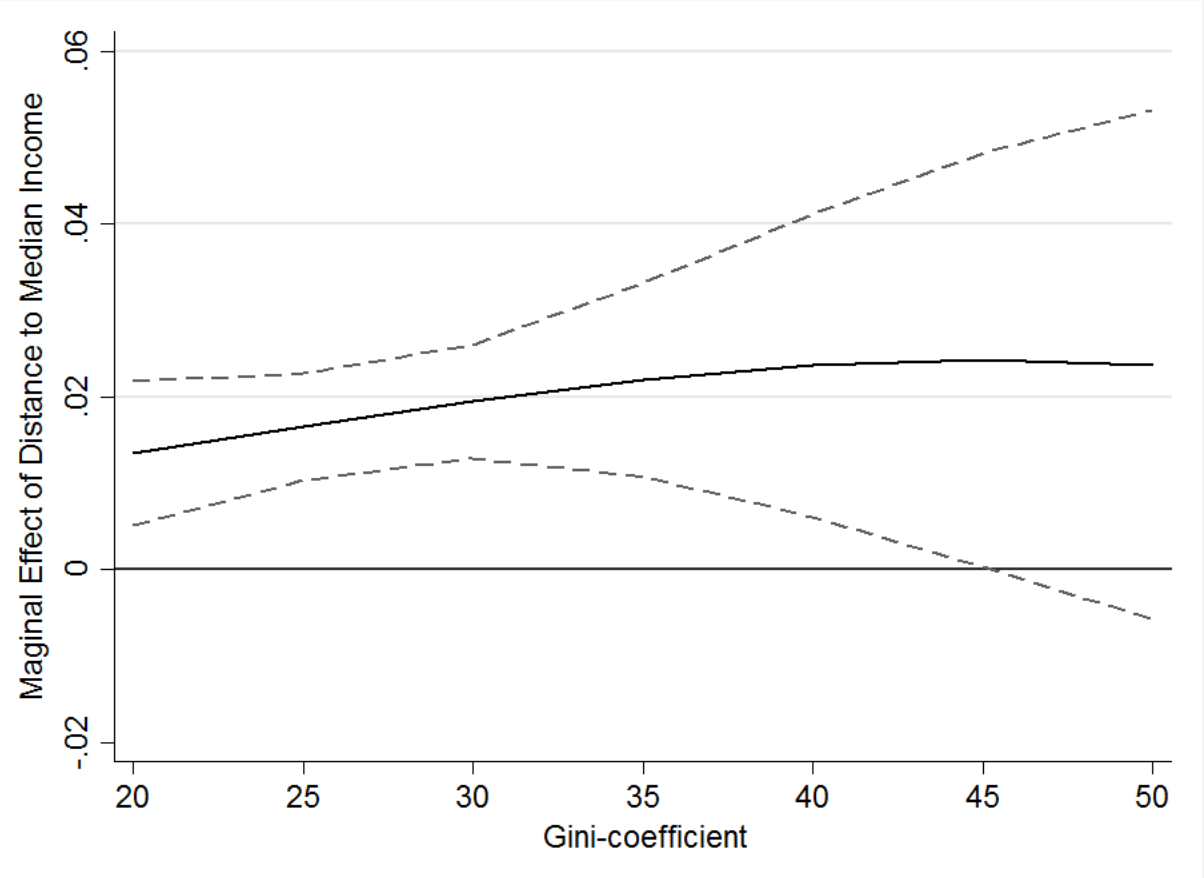

Figure S2. The marginal effects of relative income conditional on the Gini coefficient at medium levels of national wealth

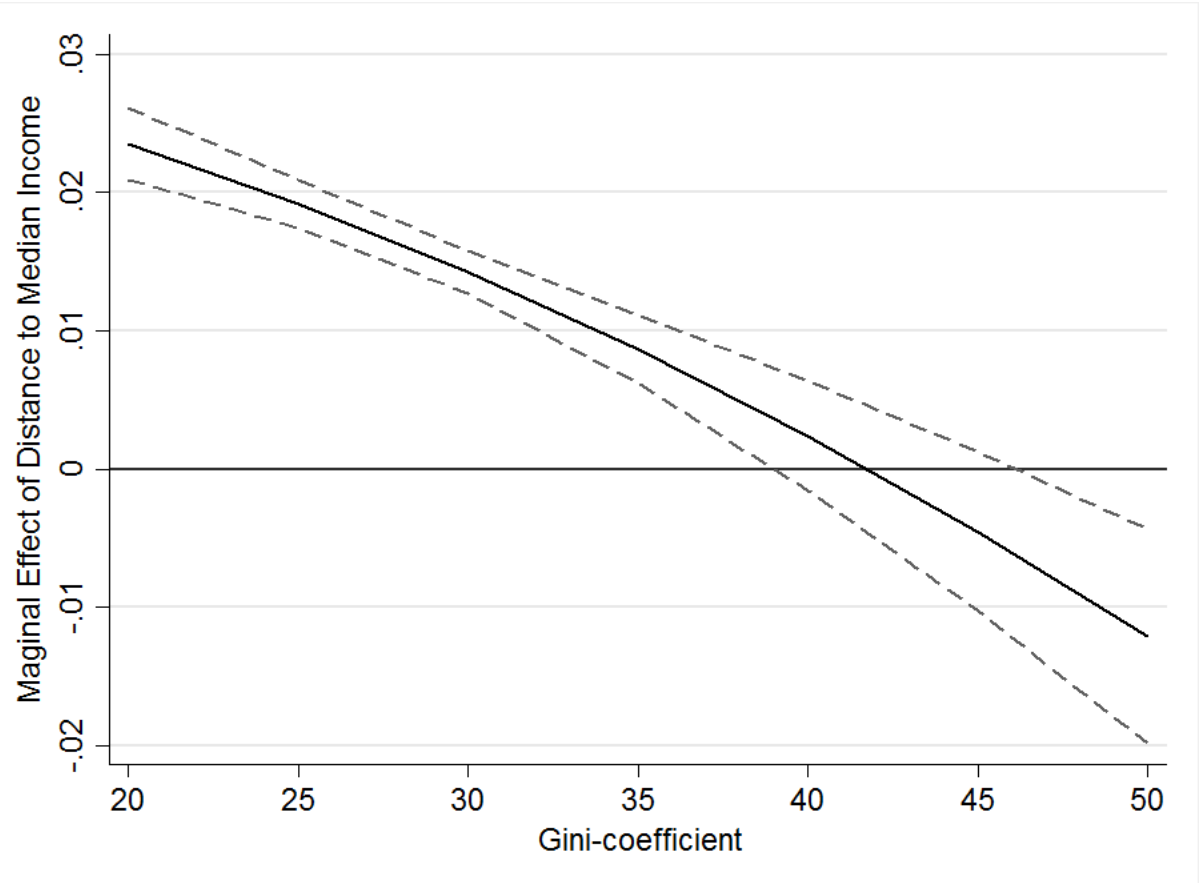

Figure S3. The marginal effects of relative income conditional on the Gini coefficient at low levels of national wealth