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In the mood for redistribution. An empirical analysis of individual preferences for redistribution in Italy

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Abstract

Over the past few years a large body of literature has studied the determinants of individual preferences for income equality and redistributive policies. In this paper, using data collected in 2005 by the World Values Survey (WVS), we specifically focus on the preferences expressed by Italians and analyse their determinants. We test a number of variables usually found to impact individual attitudes towards equality and redistribution and demonstrate that self-interest evaluations, together with the personal system of beliefs, do influence this kind of personal attitudes. The results also seem to suggest that living in a specific macro regional context may play a significant role in conditioning personal attitudes.

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1 Introduction

What explains peoples attitude towards redistributive policies? Over the past few years a large number of papers have tried to answer this question both theoretically and empirically. Most contributions of the literature focus on several potential determinants: on the one hand, it seems clear that being more or less inclined to redistribution depends on personal economic variables (income, risk propensity, expectations of social mobility, etc.); on the other hand, some papers argue that also personal beliefs (religiosity, work ethics, political orientation, etc.) have a strong impact on individual choices. Given that most of the empirical literature is based on international comparisons, scholars have also demonstrated that, in addition to individual characteristics, institutional, economic and cultural cross-country differences do play a significant role in influencing personal attitudes. The effect of context on personal attitudes may also be relevant when analyzing the preferences expressed by the citizens of a single country, where a high degree of inter-regional dishomogeneity exists. In this paper, we propose an empirical analysis based on the World Values Survey (WVS) data collected in Italy in 2005; by controlling for a number of covariates usually found to impact individual attitudes towards equality and redistribution, we confirm that self-interest evaluations, together with the personal beliefs about the role of personal effort and luck in determining personal success, do influence this kind of personal attitudes. Our results also suggest that living in a specific macro regional (North West, North East, Centre, South and Islands) context may play a significant role in conditioning personal attitudes of Italians. The paper is organized as follows: in section 2, we briefly review previous literature and its main results; in section 3, we present our data and hypotheses; section 4 presents the results of our empirical analysis, while the last section is devoted to final comments.

2 Background

The issue of the formation of individual preferences for income equality and redistributive policies has been recently deeply investigated in the economic literature. Over the last ten years a large number of papers have been devoted to the theoretical discussion and the empirical testing of hypotheses about the determinants of individual support for redistribution.

Most studies focus on the so-called *self interest hypothesis* (or *homo oeconomicus* effect, Corneo and Gruner, 2001); it assumes that individuals act as selfish utility maximizers and choose to support policies only if they may obtain net economic benefits from them. Individual preferences for redistribution are, therefore, mainly determined by the personal economic condition. On the one hand, the actual income position is relevant: when it is lower than the mean registered in the society, people assume themselves to be beneficiaries of the redistribution process and so give their support to it (Meltzer and Richard, 1981); otherwise, they oppose it. On the other hand, even people with low present income may decide to support inequality, if they have strong expectations for upward mobility in the future (*Prospect Of Upward Mobility*, POUM; Benabou and Ok, 2001). These expectations may be influenced by personal and familiar history of social mobility (Piketty, 1995) or simple observation of the social success experienced by the others (the so-called *tunnel effect*, Hirschmann, 1973). Strong support for these hypotheses is provided by Alesina and La Ferrara (2005), who analyse the attitudes for redistribution in the American *land of opportunities*, and Ravallion and Lokshin (1999), who explain the high preference for inequality registered in Russia during the 1990s. As noted by Kaltenthaler *et al.* (2008), even education may have a positive impact on these expectations, because people with high levels of human capital may perceive themselves as having a high potential and so be less supportive of redistributive policies.

Finally, the *self interest hypothesis* includes variables, such as risk aversion and perception of short-term social risks (i.e. risk of income loss or reduction in income), that may have a positive influence on the demand for redistribution.

The second major theoretical explanation is based on the idea that support for welfare and redistribution depends on non-economic ideological/behavioral motivations. According to this perspective, some authors (Alesina and La Ferrara, 2005) remark that preferences for redistribution may result as the consequence of a sense of altruism or as the effect of personal sensibility for the more general theme of equality in opportunity. Corneo and Gruner (2001) argue that, apart from the *homo oeconomicus* effect, people tend to be influenced by their relative position in the society (*social rivalry* effect) and by their individual beliefs about success factors (*public values* effect). Fong (2001) demonstrates that personal beliefs about the role of effort and luck in self-determination are strong predictors of support for welfare policies, while economic motivations have only a secondary role.

In general, the literature considers political values as causal predictors of individual support for welfare state (Kaltenthaler *et al.*, 2008): thinking of oneself as right/left wing oriented may influence the personal attitude towards welfare state policies and determine low/high support for income equality and redistribution. However, treating subjective political measures as causal predictors of welfare support may cause theoretical and empirical problems (how can we be sure of the direction of the causal link by simply using crosssectional data?), even if, by using longitudinal data and an instrumental variables approach, Jaeger (2008) demonstrates that the predicted causal effect actually exists.

Adopting this kind of perspective, few authors (Scheve and Stasavage, 2006; Stegmuller *et al.*, 2011) investigate the role of religious orientation (denomination and participation) and conclude that religiosity negatively affects individual preferences for redistribution, probably because of the historical conflict between State and Church on welfare provision.

Other papers (Alesina *et al.*, 2001) focus on the issue of racial orientations, arguing that the high preferences for inequality registered in the U.S.A. may also depend on the fact that the U.S. welfare spending mainly benefits discriminated minorities.

While it is clear that country characteristics also affect individual preferences (see also the results of the experimental study by Farina and Grimalda, 2010), it is very difficult to distinguish the effects on individual attitudes determined by i) the institutional context ii) the national culture and iii) the economic context[1]. Focusing on the institutional determinants, Svallfors (1997) remarks that preferences for welfare policies may be influenced by the different welfare regimes typologies. Using German data collected after the reunification and adopting a more sophisticated empirical approach, Alesina and Fuchs-Schndeln (2007) analyze the impact of political regimes on individual preferences. Their results show the existence of significant differences between the preferences of the citizens that lived under the Communist regime and of those who lived in West-Germany, with the former being more in favor of welfare policies and redistribution. A convergence towards the preferences of western people is nonetheless registered a few years after the fall of the Berlin wall.

While all the above mentioned papers analyze preferences for redistribution from a multicountry perspective, less attention has been devoted to understanding how regional conditions may influence them. Nevertheless, especially in countries characterized by high inter-regional economic disparities and cultural differences, understanding the impact of regional conditions on personal attitudes may yield interesting results. To the best of our knowledge, only a few papers focus on differences in regional preferences for redistribution: one is by Garcia-Valinas *et al.* (2008), who

[1] In empirical analyses, countries differences are usually analyzed by means of country dummy variables that end up being a sort of black boxes (Guillaud, 2008)

investigate individual preferences in Spain; after controlling for individual characteristics, they find that regional conditions (inequality and regional public expenditures) may also be relevant when explaining regional differences. Another related paper is by Boarini and Le Clainche (2009), who analyze individual preferences expressed by French people and find them partially influenced by their region of residence.

3 Data

Our econometric analysis is based on the WVS database. Based on interviews to representative samples of the population, this database collects data about the socio-economic characteristics of the interviewed people, together with information about their personal beliefs, cultural tendencies and ideas about political, religious, and economic issues.
The WVS surveys were carried out in a wide set of countries during five rounds, from 1981 to 2005. We base our analysis on the 2005 data that register the lower rate of missing values for the variables we are interested in[2]. After listwise deletion of incomplete cases, the final sample contains 939 observations. A chi square goodness of fit test demonstrates that, even after the listwise deletion, our macro regional distribution of the sample is similar to the one of the population (chi square= 0.36, p=0.949) .
The complete list of selected variables and their descriptions are presented in tab.1 (see the appendix).
Assuming that people are sincere believers of their preferences, we measure the individual attitude towards redistribution through the answer given to the question concerning their preference about the desired level of income equality; in order to answer to this question, people had to use a discrete and ordered scale. For presentation purposes, we used the reversed original scale as dependent variable and labeled it **REDISTRIBUTION**.
According to the literature reviewed in section 2, a broad set of variables may be selected as explanatory: from the individuals socio-demographic and economic characteristics to the features of the institutional and spatial context they live in. This paper focuses on the sociodemographic determinants, the *homo oeconomicus* hypothesis, the impact of ideological attitudes and personal beliefs and context variables. Tab. 2 presents some descriptive statistics about all the variables (see the appendix).
Gender, age and marital status are used as socio-demographic controls. Womens attitude to solidarity is reported by the literature (see Svallfors, 1997, for a discussion on this point) and we control for it by the inclusion of the dummy variable **FEMALE**. The impact of age is controversial; from a general point of view, we can imagine that younger people are less supportive of state spending and redistribution as they perceive they have a longer time to pursue social mobility and income increments, while older people, especially when approaching retirement age, may have stronger support for equality and income redistribution. In our regressions we use the continuous variable **AGE** and, in order to check for the possible nonlinearity, we also include its squared values (**AGE2**). Marital status may also be relevant: divorced, separated or never married are reported to be more inclined to redistribution than married people (Singhal, 2008; Alesina *et al.*, 2001; Fong, 2001), probably because they cannot rely on the support of a partner. In our regression analyses, we use the dummy **MARRIED**.

[2]The Italian sample for 2005 was created by taking into account the regional distribution of the population, age and gender, but no stratification by education was possible; therefore, people with lower education are underrepresented. For more details see the Technical Specifications of the 2005 Values Survey on the WVS website (http://www.wvsevsdb.com).

According to the *homo oeconomicus* approach, the respondents financial situation is one of the most important determinants of the individual support to redistribution. The WVS database includes one question about the respondents household income [3], but unfortunately a great number of answers to these questions are missing. Therefore, we were forced to use the question concerning the personal satisfaction with the financial situation of the household. Answers to this question are discrete and ordered and recorded by the variable **FINANCIAL**. Clearly, the satisfaction about the financial condition of the household does not depend entirely on the amount of the respondents personal income; incomes provided by other members of the household, the number of members, as well as personal expectations, may influence the answers given by the respondents.
Two variables are used to describe the employment status of the respondents. The dummy variable **SELF** takes the value 1 if the respondent is reported to be self employed. This variable may be a good proxy for risk propensity as self employed people may be considered as naturally risk neutral or risk loving . The dummy variable **UNEMP** takes the value 1 if the respondent is unemployed. Unemployment status may have a strong impact on attitudes towards redistribution: following Kaltenthaler *et al.* (2008), unemployed people think of themselves as the losers of the markets operations and so may be in favor of State redistributive intervention.
Ideological attitudes and personal beliefs may affect personal support to redistribution. Here we focus our attention on the personal beliefs about the role of personal effort and luck in determining personal success. Personal opinions about this issue are recorded by the discrete and ordered variable **HWORK**. Thinking that personal success is just a matter of personal effort means that lack of effort is interpreted as the cause of economic difficulties; this may lead to low support to redistribution.
Religion may also be an important explanatory variable. Scheve and Stasavage (2006), as well as Stegmuller *et al.* (2011), argue that religion and welfare state spending may be interpreted as substitute mechanisms of social insurance; therefore, more religious individuals (Protestants and Catholics) are less supportive of social spending. We test this hypothesis by means of the variable **CHATT**.
The educational level of individuals (**EDUCATION**) may also act as an explanatory variable: on the one hand, more educated people are supposed to be well informed about costs and benefits of the redistribution; on the other, they may have more expectations about future social mobility. The WVS database includes one question about the formal education level achieved by the respondents. We grouped answers in three categories: primary education (**PRIMARY**, no higher than the Italian *scuole medie*, middle schools with pupils aged 11-13), secondary education (**SECONDARY**, no higher than *scuole superiori*, secondary schools with pupils aged 14-19) and tertiary education (**TERTIARY**, *laurea*, masters degree or higher).
Finally, we consider some variables useful to describe the context where the respondents reside. First of all, we analyze the possible impact of the size of the city of residence. While some studies find residence in large cities to be correlated with higher preferences for redistribution and welfare policies (Alesina, 2001), it seems reasonable to assume that very small towns are generally characterized by a high level of social cohesion among the inhabitants, so that people living there are naturally more in favor of income equality than the ones living in very large and high income cities. Data on this issue were taken from the WVS variable collecting respondents descriptions of their own domicile (**DOMICILE**). Possible answers were grouped in few categories: $>$ **500,000** inhabitants, **100,000-500,000** inhabitants, **20,000-100,000** inhabitants and $<$ **20,000** inhabitants.
As is well known, Italy is characterized by persistent economic disparities between the Centre-

[3] Respondents were asked to describe their household income choosing from a scale of incomes on which 1 indicates the lowest income decile and 10 the highest income decile in their country.

North and the Southern and insular regions; in order to illustrate these disparities, in fig. 1 (see the appendix) we report, for each Italian macro region (North West, North East, Centre, South and Islands[4]), the corresponding per capita income relative to the national per capita income (**GDPRel**) and the Gini coefficient (**GINI**) [5]. These two variables exhibit a negative correlation (Pearson correlation test, ρ= -0.872, p=0.128): South and islands register low per capita income and high inequality while the Northern macro regions are sensibly richer and less inequal.

4 Methodology and Results

Given the discrete and ordered nature of our dependent variable, regression analyses were carried out using a standard ordered logit model. In the ordered logit model we assume that the support for distribution of individual i can be characterized by a continuous latent variable:

$$Y_i^* = X_i\beta + R\gamma + \epsilon_i \tag{1}$$

where X_i is is a vector of individual characteristics, R is a vector of macro regional dummies, ϵ_i is a random error term with logistic distribution and β and γ are parameters to be estimated. We do not observe Y_i^* but a variable e Y_i that takes the values 0 to 9, increasing in individual support for redistributive policies. More in detail, we have:

$$Y_i = j \text{ if } \kappa_{j-1} < Y_i^* < \kappa_j \text{ for } j = 0, \ldots, 9 \tag{2}$$

where κ_j indicates unknown cut-points to be estimated, assuming that $\kappa_0 = -\infty$ and $\kappa_9 = +\infty$. The model applies to data meeting the parallel lines assumption (proportional odds, Long and Freese, 2006) that the effect of the independent variables does not vary by the level of the dependent variable.

Parameters estimates are presented in tab. 3 (see the appendix).

The results suggest that personal attitudes towards redistribution are affected by self-interest evaluations (depending on personal financial conditions, level of education and attitude to risk) and by the personal system of beliefs about the determinants of success; no significant impact is found for the demographic variables (gender, marital status and age) and for religiosity while the context (dimension of the city of residence, economic conditions of the macro region) seems to play some role: people living in less developed regions are more in favour of redistribution. These results are robust to the different model specifications reported in tab. 3.

Model (1) presents a basic specification where all the individual variables were included together with the dummies for the macro regions. While all the demographic variables (**AGE**, **FEMALE**, **MARRIED**) have no significant impact on individuals' attitude towards redistribution, the modalities of **EDUCATION** are found to be jointly significant. Given the positive sign of the coefficient of **PRIMARY** we found in all the models, people having lower levels of education are more inclined to redistribution. No significant coefficient was found for **SECONDARY**. The interpretation of

[4] According to the classification provided by the National Institute of Statistics (ISTAT), the North-West includes the following regions: Valle d'Aosta, Piemonte, Lombardia and Liguria; the North-East includes: Trentino Alto Adige, Veneto, Friuli Venezia Giulia and Emilia Romagna; the Centre includes: Toscana, Umbria, Lazio and Marche; the South includes: Abruzzo, Molise, Campania, Puglia, Basilicata, Calabria; islands include Sicilia and Sardegna.

[5] The source is *ISTAT Regional Economic Accounts Database* for the per capita Gdp and *ISTAT Survey on Life Conditions* for the Gini index.

this result is complex: on the one hand, we can imagine that less educated people are not fully aware of the costs arising from redistribution and so tend to be more inclined to equality; on the other hand, it also seems reasonable to suppose that they have very low chances of social mobility and so are more inclined to accept State redistributive interventions.
Results obtained for **FINANCIAL** indicate that individuals' attitude towards redistribution is influenced by their financial condition: people being more satisfied about their financial condition, are less pro-redistribution. The coefficient of **SELF** is negative and significant. This result seems to be compatible with the hypothesis that risk loving people are less inclined to redistributive policies. **UNEMP** has the expected positive sign but it is found to be not significant.
HWORK has a positive and significant coefficient: thinking that personal effort is not a sufficient ingredient for success leads to higher preferences for income equality. In contrast with some of the previous studies, **CHATT** modalities neither jointly nor individually have a significant effect.
Looking at the variables focusing on context, the categories of **DOMICILE** are found to be insignificant both jointly and individually. Although the coefficients corresponding to the macro regional dummies are jointly insignificant (p=0.115), the signs of the coefficients of **SOUTH** and **CENTRE** dummies are positive and significant. The result suggests that living in these two macro regions may have an influence on personal preferences.
In models (2) and (3) the macro regional dummies are replaced, respectively, by **GINI** and **GDPRel**. In these models the estimates are obtained by using standard errors adjusted for clustering on the macro regions, in order to allow the errors to be correlated across individuals within the same macro region. The coefficients of these variables are found to be significant; in model (2) **GINI** registers a positive sign, while **GDPRel** registers a negative one in model (3). These results confirm the hypothesis that greater macro regional inequality leads to stronger preferences towards equality while living in richer macro regions is correlated to preference for inequality.
Comparing model (1),(2) and (3) results do not change significantly except for **UNEMP** and **DOMICILE**: they turn out to be significant in model (2) and (3). Following the predictions, **UNEMP** is found to positively affect personal preferences. Looking at **DOMICILE**, we found that people living in medium size cities (**100,000 - 500,000** inh.) and small towns (<**20,000** inh.) register higher preferences for income equality.
In order to ensure the robustness of our findings, we checked all the specifications for the presence of multicollinearity: we run OLS regression and calculated the variance of inflactor factor (VIF)[6]. No relevant multicollinearity was detected in the three models: only **AGE** and **AGE2** showed evidence of multicollinearity (VIF > 10) but removing **AGE2** did not change results, so it was retained for theoretical reasons.
Two further checks were carried out. First, we recoded the dependent variable **REDISTRIBUTION** in five categories and run again the ordered logit models showed above. The results support the findings achieved by the previous models[7].
Secondly, we run again specification (1) using **REDISTRIBUTION** recoded into five categories as the dependent variable and a partial generalized ordered logit model (partial gologit) [8]. This check was aimed at verifyng if the impact of the explicative varaibles, and especially the one of the macro regional dummies, varies across the categories of the dependent variable. As a matter of fact, the generalized ordered logit model (Williams, 2006) may be applied to allow the coefficients to vary across categories of the dependent variable when the parallel lines assumption of the ordered

[6]OLS estimation are omitted for lack of space but are available upon request. Results are not significantly different from the ones obtained by ordered logit.

[7]Results are omitted for the lack of space but available upon request.

[8]The reduction of the number of categories of the dependent variable was useful to simplify the model and achieve convergence of the model. It also helps the visualization and interpretation of the results.

logit is violated. Looking at equations [1] and [2], this means that each coefficient β and γ is allowed to differ for each of the categories j. In the partial generalized ordered logit model the parallel lines constraint is relaxed only for those variables where it is violated; variables whose effects do not significantly differ across equations have proportionality constraints imposed [9]. The results of the partial gologit are reported in tab. 4 (see the appendix). They mainly confirm the ones we obtained with the ordered logit model but highlight the existence of a significant effect of **AGE** and **AGE2**. The coefficients and significance of **CENTRE**, together with the ones of **FINANCIAL** and **HWORK**, were found to vary significantly across the categories of the dependent variable. The parallel lines assumption holds for **SOUTH**.

5 Conclusion

Using data from the WVS collected in Italy in 2005, in this paper we empirically investigated the determinants of individual attitudes towards redistribution. While the relevant literature has mainly studied the determinants of personal attitudes towards redistribution with a cross country approach so far, we focused on data from one single country, Italy, which is characterized by a high level of inter-regional economic disparity. The aim of the paper was two-fold: on the one hand, we wanted to test, with the support of the Italian data, some of the predictions found in the literature about the individual determinants of pro-redistribution preferences; on the other hand, we planned to verify if living in a specific macro regional context may play a significant role in conditioning personal attitudes.

We found out that self-interest evaluations (satisfaction with the financial condition of the household, educational status, self employment status), together with the personal system of beliefs (opinion about the role of effort and luck in success), do influence personal attitudes towards redistribution. The results also suggest that personal attitudes may be influenced by the context: per capita income and income distribution in the macro region of residence seem to have a significant impact while we found mixed results about the impact of dimension of the city/town of residence. Future research may focus on the analysis and interpretation of the differences in the impact of the personal variables among the macro regional contexts.

[9] In order to verify which of the coefficients violates the parallel line assumption a Brant test (Brant, 1990) was run; the results we obtained are omitted for lack of space but are available upon request.

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Variable code	Question in the original WVS questionnaire	modalities
REDISTRIBUTION	V. 116: How would you place your views on this scale?	0: we need larger income differences as incentives for individual effort 1 2 3 4 5 6 7 8 9: Income should be made more equal
AGE	V.237: How old are you?	*continuous variable*
AGE_2	square of AGE (own calculataion)	*continuous variable*
FEMALE	V.235: sex of respondent	0: male 1: female
MARRIED	V.55: Are you Married, Divorced, Separated, Widowed or Single?	0: single or divorced/separated/widowed. 1: married
FINANCIAL	V.68: How satisfied are you with the financial situation of your household?	1: Completely dissatisfied 2 3 4 5 6 7 8 9 10: Completely satisfied
EDUCATION	V.238: What is the highest educational level that you have attained?	Primary Secondary Tertiary
UNEMP	V.241: Are you employed now or not?	0: not unemployed 1: employed
SELF	V.241: Are you employed now or not?	0: Not self employed 1: Self employed
HWORK	V.120: How would you place your views on this scale?	1: in the long run, hard work usually brings a better life 2 3 4 5 6 7 8 9 10: it's more a matter of luck and connections

continued on next page

CH_ATT	V.186: Apart from weddings and funerals, about how often do you attend religious services these days?	1: More than once a week 2 3 4 5 6 7: never, practically never
DOMICILE	V.255: Size of town	<20.000 inhabitants 20.000-100.000 inhabitants 100.000-500.000 inhabitants >500.000 inhabitants
MACRO REGION	V.257: region where the interview was conducted	North West North East Centre South

Tab. 1: Variables from World Values Survey used in the analysis: codes, original question in the 2005 questionnaire and modalities.

Variable		Min	Max	Mean	Std. Dev.
AGE		18	74	45.54	15.50
AGE2		324	5476	2313.53	1443.18
FEMALE		0	1	0.50	0.50
MARRIED		0	1	0.61	0.49
EDUCATION	PRIMARY	0	1	0.33	0.47
	SECONDARY	0	1	0.44	0.50
	TERTIARY	0	1	0.23	0.42
UNEMP		0	1	0.06	0.24
SELF		0	1	0.17	0.38
HWORK	1	0	1	0.09	0.29
	2	0	1	0.08	0.27
	3	0	1	0.10	0.31
	4	0	1	0.09	0.29
	5	0	1	0.18	0.38
	6	0	1	0.12	0.32
	7	0	1	0.11	0.31
	8	0	1	0.12	0.33
	9	0	1	0.05	0.22
	10	0	1	0.06	0.23
CHATT	1	0	1	0.07	0.26
	2	0	1	0.24	0.43
	3	0	1	0.22	0.42
	4	0	1	0.26	0.44
	5	0	1	0.04	0.20
	6	0	1	0.05	0.22
	7	0	1	0.12	0.32
FINANCIAL	1	0	1	0.02	0.14
	2	0	1	0.02	0.13
	3	0	1	0.03	0.17
	4	0	1	0.05	0.22
	5	0	1	0.12	0.32
	6	0	1	0.22	0.42
	7	0	1	0.24	0.43
	8	0	1	0.20	0.40
	9	0	1	0.05	0.22
	10	0	1	0.05	0.22
DOMICILE	<20,000	0	1	0.52	0.50
	20,000-100,000	0	1	0.26	0.44
	100,000-500,000	0	1	0.10	0.30
	>500,0000	0	1	0.12	0.33
MACRO REGION	NORTH WEST	0	1	0.26	0.44
	NORTH EAST	0	1	0.19	0.40
	CENTRE	0	1	0.19	0.40
	SOUTH	0	1	0.35	0.48

Tab. 2: Descriptive statistics.

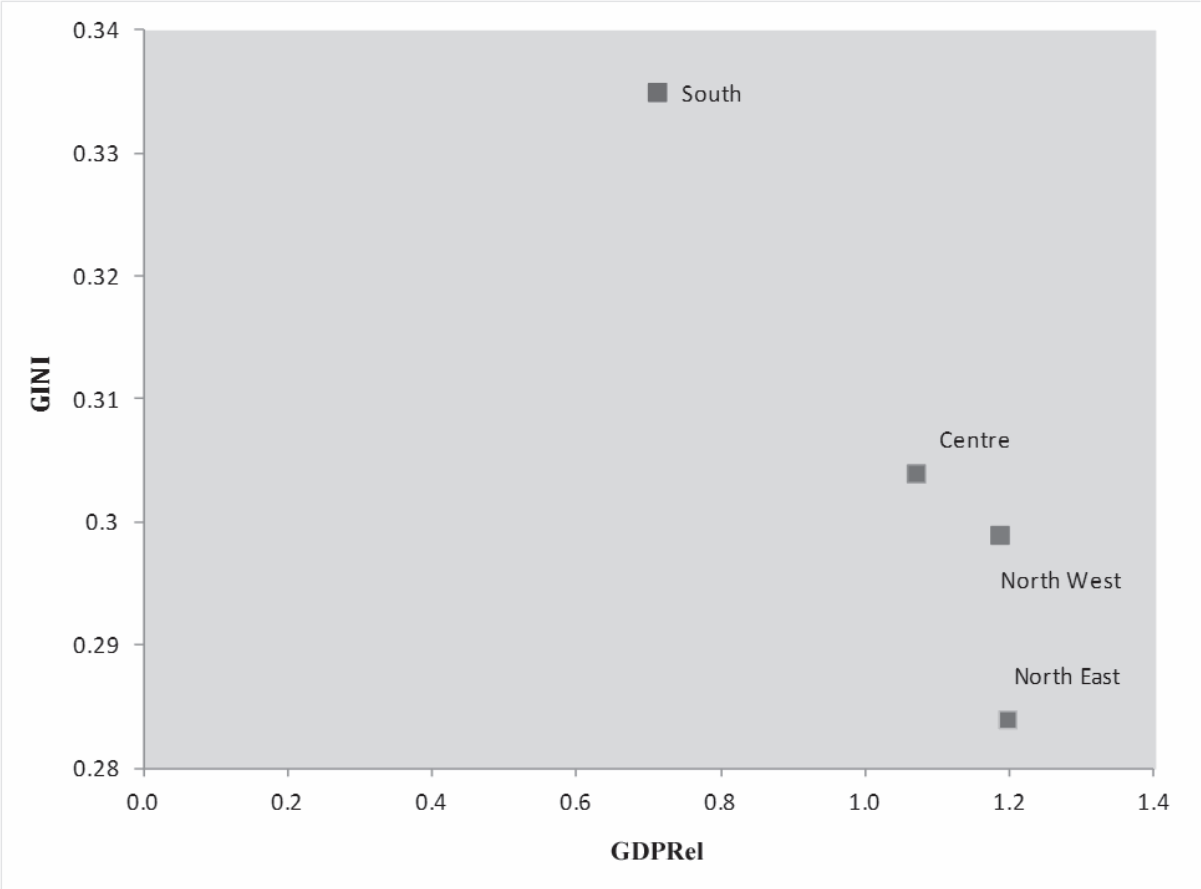

Fig. 1: Regional per capita income relative to the national per capita income (**GDPRel**) and Gini index (**GINI**) in the Italian macro regions (North West, North East, Centre, South and island), 2005. *Sources: Istat, regional economic accounts (per capita Gdp) and Istat Survey on Life Conditions (Gini index).*

		(1)		(2)[a]		(3)[a]	
AGE		-0.017	(0.026)	-0.019	(0.045)	-0.018	(0.045)
AGE2		0.000	(0.000)	0.000	(0.000)	0.000	(0.001)
FEMALE		-0.086	(0.124)	-0.073	(0.078)	-0.076	(0.078)
MARRIED		-0.146	(0.143)	-0.132	(0.089)	-0.135	(0.088)
EDUCATION	Primary	0.542***	(0.181)	0.530***	(0.090)	0.528***	(0.089)
	Secondary	0.071	(0.150)	0.067	(0.240)	0.069	(0.241)
UNEMP		0.340	(0.260)	0.325***	(0.053)	0.321***	(0.053)
SELF		-0.370**	(0.162)	-0.368***	(0.081)	-0.369***	(0.081)
FINANCIAL	1	1.591***	(0.516)	1.562***	(0.259)	1.565***	(0.255)
	2	1.395***	(0.507)	1.417**	(0.627)	1.409**	(0.632)
	3	0.881*	(0.450)	0.897**	(0.414)	0.892**	(0.418)
	4	1.456***	(0.399)	1.444**	(0.569)	1.445**	(0.567)
	5	1.259***	(0.339)	1.254***	(0.473)	1.252***	(0.476)
	6	0.974***	(0.316)	0.967***	(0.217)	0.967***	(0.217)
	7	0.693**	(0.312)	0.687***	(0.233)	0.687***	(0.233)
	8	0.556*	(0.316)	0.558**	(0.257)	0.556**	(0.256)
	9	0.906**	(0.392)	0.906***	(0.183)	0.914***	(0.183)
HWORK	1	-2.266***	(0.369)	-2.271***	(0.400)	-2.275***	(0.401)
	2	-1.525***	(0.366)	-1.508***	(0.103)	-1.518***	(0.100)
	3	-1.884***	(0.342)	-1.892***	(0.160)	-1.892***	(0.160)
	4	-1.438***	(0.346)	-1.432***	(0.198)	-1.431***	(0.199)
	5	-1.273***	(0.319)	-1.285***	(0.255)	-1.283***	(0.257)
	6	-1.341***	(0.330)	-1.333***	(0.288)	-1.335***	(0.288)
	7	-1.193***	(0.333)	-1.162***	(0.210)	-1.168***	(0.211)
	8	-1.088***	(0.338)	-1.068***	(0.310)	-1.072***	(0.310)
	9	-1.460***	(0.396)	-1.415***	(0.382)	-1.429***	(0.378)
CHATT	2	0.091	(0.256)	0.110	(0.268)	0.111	(0.267)
	3	0.011	(0.263)	0.051	(0.412)	0.047	(0.407)
	4	0.064	(0.263)	0.092	(0.325)	0.089	(0.322)
	5	-0.258	(0.383)	-0.228	(0.819)	-0.228	(0.820)
	6	0.504	(0.346)	0.508	(0.428)	0.512	(0.430)
	7	-0.181	(0.298)	-0.155	(0.258)	-0.152	(0.255)
DOMICILE	<20,000	0.183	(0.193)	0.213***	(0.073)	0.199***	(0.077)
	20,000-100,000	0.264	(0.207)	0.281	(0.177)	0.266	(0.177)
	100,000-500,000	0.346	(0.254)	0.439*	(0.234)	0.411*	(0.238)
MACRO REGION	NORTH EAST	0.228	(0.188)				
	CENTRO	0.288*	(0.172)				
	SOUTH	0.369**	(0.155)				
GINI				4.829**	(2.245)		
GDPRel						-0.530***	(0.204)
Chi-square test significance of EDUCATION classes [p-value]		11.46	[0.003]				
Chi-square test significance of CH_ATT classes [p-value]		6.31	[0.389]				
Chi-square test significance of DOMICILE classes [p-value]		2.34	[0.505]				
Chi-square test significance of MACRO REGION classes [p-value]		5.93	[0.115]				
log_likelihood		-1966.71		-1968.47		-1967.87	
Wald chi2		145.26					
Pseudo R2		0.04		0.03		0.04	
Prob>chi2		0.00					

Tab. 3: Ordered logit estimations. Dependent variable is **REDISTRIBUTION**. Coefficients and standard errors (in parentheses). *,**,*** mean significantly different from zero at the 0.10, 0.05, 0.01 significance level. a Clustered standard errors applied.

		REDISTRIBUTION=1		REDISTRIBUTION=2		REDISTRIBUTION=3		REDISTRIBUTION=4	
AGE		-0.150**	(0.061)	-0.008	(0.032)	0.050	(0.038)	-0.078	(0.053)
AGE2		0.001**	(0.001)	0.000	(0.000)	-0.001	(0.000)	0.001 *	(0.001)
FEMALE		-0.039	(0.132)	-0.039	(0.132)	-0.039	(0.132)	-0.039	(0.132)
MARRIED		-0.552*	(0.288)	-0.124	(0.173)	-0.348 *	(0.196)	0.168	(0.261)
EDUCATION	Primary	0.588***	(0.194)	0.588 ***	(0.194)	0.588 ***	(0.194)	0.588 ***	(0.194)
	Secondary	0.325	(0.250)	0.001	(0.177)	-0.003	(0.206)	0.632 **	(0.287)
UNEMP		0.424	(0.279)	0.424	(0.279)	0.424	(0.279)	0.424	(0.279)
SELF		-0.461***	(0.174)	-0.461 ***	(0.174)	-0.461 ***	(0.174)	-0.461 ***	(0.174)
FINANCIAL	1	1.619*	(0.850)	1.014	(0.622)	0.331	(0.625)	2.035 ***	(0.730)
	2	0.503	(0.534)	0.503	(0.534)	0.503	(0.534)	0.503	(0.534)
	3	1.590**	(0.767)	-0.420	(0.532)	0.791	(0.600)	2.367 ***	(0.850)
	4	0.949	(0.651)	0.582	(0.466)	0.973 **	(0.495)	2.411 ***	(0.639)
	5	1.962***	(0.509)	0.573	(0.377)	0.637	(0.425)	1.223 **	(0.553)
	6	1.826***	(0.445)	0.302	(0.348)	0.130	(0.408)	1.592 ***	(0.539)
	7	1.685***	(0.427)	0.003	(0.344)	-0.034	(0.412)	1.229 **	(0.548)
	8	1.049***	(0.405)	-0.052	(0.347)	-0.020	(0.417)	0.563	(0.521)
	9	1.564***	(0.533)	0.392	(0.436)	0.086	(0.512)	0.900	(0.678)
HWORK	1	-1.638***	(0.445)	-1.605 ***	(0.397)	-1.251 ***	(0.410)	-0.127	(0.451)
	2	-0.121	(0.505)	-1.245 ***	(0.404)	-0.795 *	(0.411)	-1.027 **	(0.482)
	3	0.171	(0.522)	-1.519 ***	(0.384)	-1.488 ***	(0.411)	-2.534 ***	(0.524)
	4	0.069	(0.544)	-0.838 **	(0.382)	-1.103 ***	(0.405)	-1.934 ***	(0.505)
	5	0.519	(0.473)	-0.527	(0.351)	-1.455 ***	(0.369)	-1.998 ***	(0.442)
	6	0.796	(0.600)	-0.432	(0.372)	-1.468 ***	(0.391)	-2.012 ***	(0.504)
	7	1.860**	(0.811)	-0.474	(0.376)	-1.039 ***	(0.383)	-2.641 ***	(0.507)
	8	0.149	(0.502)	-0.534	(0.375)	-0.634 *	(0.369)	-1.338 ***	(0.429)
	9	-0.854**	(0.381)	-0.854 **	(0.381)	-0.854 **	(0.381)	-0.854 **	(0.381)
CHATT	2	0.003	(0.273)	0.003	(0.273)	0.003	(0.273)	0.003	(0.273)
	3	0.062	(0.281)	0.062	(0.281)	0.062	(0.281)	0.062	(0.281)
	4	0.281	(0.352)	0.194	(0.290)	0.128	(0.304)	-0.582	(0.367)
	5	-0.109	(0.401)	-0.109	(0.401)	-0.109	(0.401)	-0.109	(0.401)
	6	0.473	(0.371)	0.473	(0.371)	0.473	(0.371)	0.473	(0.371)
	7	-0.237	(0.321)	-0.237	(0.321)	-0.237	(0.321)	-0.237	(0.321)
DOMICILE	<20,000	0.234	(0.209)	0.234	(0.209)	0.234	(0.209)	0.234	(0.209)
	20,000-100,000	0.323	(0.224)	0.323	(0.224)	0.323	(0.224)	0.323	(0.224)
	100,000-500,000	0.005	(0.393)	0.535 *	(0.299)	0.559 *	(0.316)	-0.602	(0.443)
MACRO REGION	NORTH EAST	0.167	(0.198)	0.167	(0.198)	0.167	(0.198)	0.167	(0.198)
	CENTRE	1.216***	(0.385)	0.214	(0.206)	0.319	(0.231)	-0.832 **	(0.353)
	SOUTH	0.288*	(0.165)	0.288 *	(0.165)	0.288 *	(0.165)	0.288 *	(0.165)
Log likelihood					-1220.03				
Wald chi2					293.23				
Pseudo R2					0.13				
Prob>chi2					0.00				

Tab. 4: Generalized ordered logit estimations with the parallel lines constraint relaxed only for those variables where it is violated. The dependent variable is **REDISTRIBUTION** recoded into 5 categories. Standard errors in parentheses. *,**,*** *,**,*** mean significantly different from zero at the 0.10, 0.05, 0.01 significance level.