Income inequality, fairness considerations and citizens’ preferences for redistribution¹

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August 2015

Jordi Garcia Muniesa
Phd Candidate
Universitat Autònoma de Barcelona
jordi.garcia.muniesa@uab.cat

ABSTRACT
The economic crisis has increased income inequality. This increase may lead to changes in citizens’ perception of the fairness of this inequality. Can these changes generate a change in people’s preferences for redistribution?
This paper will use experimental methods to measure the causal impact of different levels and sources of income inequality on citizens’ preferences for redistribution. It will depict how these two factors trigger self-interest and fairness considerations. It will contribute to the existing literature by exploring the differential impact of merit, luck and unfair social circumstances as perceived source of initial inequality.

¹ This research is part of the LIVEWHAT research project – Funded by the European Union’s Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 613237
² This is a very first draft. All comments are wellcome.
1. Introduction

One of the main consequences of the crisis started in 2008 has been a significant increase of income inequality. A recent OCDE report (OCDE, 2015) shows that income inequality has increased, even if following a long-term trend. From 2008 the average income has dropped in all income deciles. However, those at the bottom 10% of the income structure have fared worse than the median and much worse than the top earners.

This increase of the inequality levels is linked to the source of one’s income. On the aggregate, the increase in inequality has been mainly fuelled by a reduction of the labour income, which has been much more step than the reduction of returns of capital. Labour income reduction has been mainly due to the increase in unemployment rates.

This has led to a significant increase in the pre-tax-and-benefits inequality, as the number of people receiving benefits has increased and the number of people working has decreased. Taxes and benefits moderated the rise in inequality especially during the first years of the crisis and before the consolidation programmes. Additionally, they modified the composition of the lower income deciles. For instance, while poverty levels among the elder diminished, they increased among all other ages, and more significantly among the youth. The reason is that, generally, elder people receive their income from pension systems and therefore they have not been directly affected by increased unemployment rates. The crisis, thus, increased the levels of inequality. Additionally, depending on the source of one’s income different people has seen his relative position changed.

Under these circumstances it is relevant to survey the potential consequences of these changes on citizens’ demand for redistribution. The level of inequality has been considered as one of the main factors determining citizens’ demand for redistribution. According to the standard rational choice theorists, an increase of the inequality levels would tend to generate higher demand for redistribution among the poor and those below the median. Other authors argue that support for redistribution can also arise on other social sectors, as people hold some pro-social motivation and other regarding preferences. If people care about inequality levels, their support for redistribution will increase if inequality does. Furthermore, some theories argue that depending on whether people regard one’s and others’ situation in the inequality structure as his or their responsibility or as a consequence of circumstances outside one’s control can trigger different fairness considerations. These fairness considerations may lead to higher or lower support for redistribution. As the crisis has been a significant change in the economic circumstances it might have led to

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3 In this paper I will be analysing income inequality. Thus, whenever I use the term inequality I will be referring to income inequality.
different evaluations of citizens’ control over their economic circumstances. Thus, it might have caused changes in citizens’ demand for redistribution.

In this paper I aim to measure how inequality levels and the source of inequality affect citizen’s preferences for redistribution. I seek to isolate the impact of these two factors. I will conduct a laboratory experiment in which participants will receive different initial allocations based on three different factors: luck, merit, and social circumstances. Participants will be offered to choose a flat tax-rate that will be used to redistribute equally what has been collected among all participants, reducing thus the initial inequality. They will choose the tax under different circumstances. Firstly, as an unaffected participant, not affected by the tax they choose. Secondly, they will choose as an affected participant who will thus be taxed and receive some redistribution but under uncertainty, that is without knowing which is their position in the income inequality structure. Finally, they will choose as an informed affected participant, after being informed of which is their actual position in the income inequality structure. Thus I will be able to analyse the interaction between fairness considerations and self-interest. Finally, there will be two different inequality structures. Half of the participants will be exposed to a high inequality structure, while the other half will be exposed to a low inequality structure.

The experiment is part of and is funded by the LIVEWHAT – Living with hard times – Citizens’ resilience in times of crisis research project. It is a collaborative project funded by the European Union’s Seventh Framework Programme for research, technological development and demonstration. It is focussed on the individual and collective responses to the crisis.

The paper is organised as follows: First, I will briefly depict the main theoretical approaches to explain citizens’ preferences for redistribution. I will focus on self-interested based explanations and its’ limits on one hand and on social-concerns based preferences and its’ potential contributions on the other. Then, I will explain my research strategy, which is based in the use of experimental methods and describe the experiment design. Finally, I will present provisional results from the ongoing results analysis.

2. Preferences for redistribution

The literature on preferences for redistribution has focussed on two main explanatory factors: self-interest and others-regarding considerations. The former has often been claimed as the only factor determining those preferences. However, in the last decades, an increasing amount of literature is surveying the role of other-regarding preferences. However, the authors of the latter approach do not deny the role of self-interest. They argue that both motives interact. In this section I will briefly
depict the main contributions of both schools of thought and I introduce my ideas to contribute to the understanding of preferences for redistribution.

2.1 Self-interest based explanations
The dominant explanations of attitudes towards redistributions in contemporary social science literature have been based on self-interest. They assume a) the capacity of individuals to recognise their best self-interest based on material grounds and b) that they act accordingly to this self-interest regardless of non-material interests, other-regarding preferences and other moral reasons. According to these analyses, those in the bottom of the wealth distribution are expected to support redistribution from the top down, as it will increase their income. On the other hand, the wealthy are supposed to oppose redistributions to avoid losing income. Finally those in the middle will vary their attitudes depending on the pre-distribution, supporting those redistributive measures that maximise their absolute or relative wealth.

The paradigmatic example of these theories is the Meltzer and Richard’s median voter model. It assumes that citizens calculate whether they will benefit or be penalised from government redistribution. Exclusively on these grounds they decide whether they support or they oppose redistribution. The median voter is the key to know whether there will be majority support for redistribution or not. If her income is lower than the mean, she will support redistribution. If her income is higher, she will oppose to it (Meltzer and Richard, 1981).

Many other theories from a variety of disciplines and traditions have assumed this direct link between objective self-interest citizens’ attitudes and behaviours. However, significant research demonstrates that citizens’ motivations are different and that the model does not hold. One of the soundest examples of the questioning of the homo-economicus hypothesis is the Fehr and Schmidt (1999) experiments, in which citizens behave in such ways that they do not maximise their income in order to reduce inequality. They have repeated a variety of economically incentivised experiments in many different cultural contexts and income has consistently proved to be a poor predictor of attitudes towards redistribution. Additionally, Observational data shows significant levels of support for redistribution among those with income over the mean, and relevant levels of opposition among those below it (Alesina and Angeletos, 2003; Fong, 2001, Bartels, 2008). Some authors have improved the prediction capacity by including a variety of factors in the definition of self-interests. For instance, Benabou and OK (1998) introduce the role of expected mobility, which can explain to some extent why some people below the mean might support redistribution and why some above it might support redistributive measures. Other authors have surveyed the role of misinformation on citizens’ attitudes, showing how in some cases people did not know their relative position and thus
they failed to connect their self-interest to the evaluation of the redistribution policies (Slemrod, 2006; Bartels, 2008, Kuziemko et al. 2013). However, significant empirical research shows that often one’s position in the income distribution, even in these enriched models, is not a good predictor of citizens’ attitudes towards redistribution (Sears et al., 1980; Bartels, 2008; Fong, Bowles and Gintis, 2006).

2.2 Social concerns based considerations

A broad body of literature shows that attitudes towards redistribution are, at least partially, caused by considerations other than self-interest. These theories focus on mainly two aspects: other regarding preferences and fairness considerations (Fehr and Smith, 2003).

Some theorists have explored the role of other-regarding preferences. They claim that people’s preference include some level of altruism. Therefore, people include others’ income in one’s utility function. The Fehr and Schmidt (1999) Inequity Aversion model is a clear example. It claims that people judge inequality taking into account their position and the position of others. When they experience advantageous inequality, they feel altruism towards those below a benchmark and support redistribution to the bottom. When they experience disadvantageous inequality they feel envy and support redistribution from the top down. The model shows how people can voluntarily contribute to public goods instead of free-riding, and similarly how people can assume costly punishment to free-riders even when they will not get any future gain out of it. Further experimental research such as Tyran and Sausgruber (2006) is based on this model and confirms that introducing realistic heterogeneous levels of non-egoistic preferences can lead to better predictions of support for redistribution.

However, the support for redistribution to others is not unconditional. Other theories have focussed on fairness considerations which take in to account the worthiness of the potential recipient of redistribution. According to these theories, people tend to be more redistributive when they consider that the potential recipients have been victims of bad luck or unfair circumstances. On the contrary, when they consider that potential recipients are in a bad situation due to their lack of effort or to their free-riding attitude, people reduce their support for redistribution. Experimental evidence based on ultimatum, dictator games and public goods games shows that the driving motive of this higher support for redistribution is often not based on self-interest neither unconditional altruism (Fong, Bowles and Gintis, 2006; Krawczyk, 2013; Fong and Luttmer, 2011). Observational data can also support this claims. For instance, Alesina and Angeletos (2003), Fong, Bowles and Gintis (2006) and Benabou and Tirole (2006) show how perception of responsibility of the poor on their situation correlates with support for redistribution.
The aforementioned literature highlights the role of worthiness of the recipient. However potential recipients’ worthiness is not the only fairness-related consideration when analysing this initial inequality. For instance, do all circumstances outside of one’s responsibility trigger the same level of support of redistribution? Whether the mechanism leading to the initial inequality is regarded as fair, unfair or neutral can have a significant role in the evaluation of the situation. While Alesina and Angeletos (2003) and most of the fairness considerations literature differentiate solely between fair circumstances (effort or merit related) and unfair circumstances (not related to merit or effort), differentiating between different unearned income sources might also lead to variation in the levels of support for redistribution. Distinguishing between luck and unfair social circumstances as the cause of pre-tax income inequality can also trigger different fairness considerations. A recent experimental study (Durante, Puterman and Weele, 2014) analysed the issue but found not conclusive evidence. More evidence is needed to isolate the role of different perceptions of fairness of the initial inequality on support for redistribution. This paper aims to contribute to the understanding of the impact of source of the initial inequality on citizens’ preferences redistribution.

3. Research strategy

In this research I seek to isolate the impact of a) the level of inequality and b) the source of inequality on the support for redistribution while controlling for fairness considerations and self-interest motives. I especially aim to differentiate between fairness considerations linked to three different sources of initial inequality: merit, luck and unfair social circumstances. To do so I rely on experimental methods. Using experimental methods facilitates isolating the causal factors the researcher is interested in. Thus, while in observational analysis it is certainly complicated to control for all the possible confounding effects, the experimental method ensures that the only variation between different circumstances are the treatments that the experimenter manipulates.

The research is based on an economically incentivised laboratory experiment in which participants were asked to choose a preferred tax rate under different circumstances. Participants’ initial endowment, the level of inequality among participants, and the source of this inequality were manipulated. There were two groups. Both groups received the same amount of money, but it was initially distributed differently. One group had a high level of inequality, which reproduced the 2012 Spanish income inequality structure. In this structure the participant who received a higher initial payment received an income 150 times higher than the participant receiving the lower initial payment. This difference reproduces the gap between the income received by those in the higher end of the poorest 1% and those at the bottom of the richest 1% in Spain. The other group had a
much lower inequality, reproducing a linear 6:1 inequality structure. Each session contained just one group, high or low inequality. Table 1 shows the initial income structure for each group.

**Table 1: Initial payments for High and Low Inequality Groups**

<table>
<thead>
<tr>
<th>Participant</th>
<th>High-inequality treatment</th>
<th>Low-inequality treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>€ 0.1</td>
<td>€ 1.3</td>
</tr>
<tr>
<td>2</td>
<td>€ 0.8</td>
<td>€ 1.7</td>
</tr>
<tr>
<td>3</td>
<td>€ 1.6</td>
<td>€ 2.0</td>
</tr>
<tr>
<td>4</td>
<td>€ 1.9</td>
<td>€ 2.3</td>
</tr>
<tr>
<td>5</td>
<td>€ 2.3</td>
<td>€ 2.7</td>
</tr>
<tr>
<td>6</td>
<td>€ 2.5</td>
<td>€ 3.0</td>
</tr>
<tr>
<td>7</td>
<td>€ 2.8</td>
<td>€ 3.3</td>
</tr>
<tr>
<td>8</td>
<td>€ 3.0</td>
<td>€ 3.7</td>
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<tr>
<td>9</td>
<td>€ 3.3</td>
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<tr>
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<td>11</td>
<td>€ 3.8</td>
<td>€ 4.7</td>
</tr>
<tr>
<td>12</td>
<td>€ 4.2</td>
<td>€ 5.0</td>
</tr>
<tr>
<td>13</td>
<td>€ 4.5</td>
<td>€ 5.3</td>
</tr>
<tr>
<td>14</td>
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<td>€ 5.7</td>
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<tr>
<td>15</td>
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<td>20</td>
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</tr>
<tr>
<td>21</td>
<td>€ 15.0</td>
<td>€ 8.0</td>
</tr>
</tbody>
</table>

In each session the source of the inequality was manipulated. There were three sources: luck (a draft), skill (using a logical reasoning test), and social circumstances (family background, measured through parents’ job and education level).

Participants were asked to choose a tax rate for each source. They were informed that one of the choices would be randomly selected and applied to all participants, determining thus their final pay-off. The choices were made after being informed of the level of inequality, having seen few examples of the redistributive impact of different tax rates (0%, 25%, 50%, 75%, 100%), and having been informed of the three different sources of inequality.

Participants made these choices three times under different conditions (unaffected, under uncertainty and with full information). Participants were informed that they would be asked to choose a tax rate three times. However, they were not told in advance under which conditions they would do these choices. Firstly they chose as an agent unaffected by the situation. They were
informed that the rest of participants would receive an initial endowment depending on a draft, on their performance on the quiz, and on their family background. They had to decide a tax rate for each condition. Their payment did not depend on their choice, but the rest of participants’ did. In this choice, thus, self-interest does not play any role in the decision. Only fairness considerations are in place.

Secondly, they were asked to make the choices again, but this time they would be affected by their own decision. They were not informed of their position in the income structure in the different conditions. Therefore, they made the choice under uncertainty as they did not know their position. After having made the choice, they were asked which position they thought they were in each condition. Thus, the interaction between fairness considerations and self-interested insurance motives can be measured.

Thirdly, participants were asked to make the choice after being informed of which position they had in each condition. Thus, they did the choice under full information on which was their initial endowment and relative position in the income scale. In this choice the interaction between self-interest with full information and fairness considerations will be measured.

Finally, participants were asked to respond a questionnaire. Questions regarding participants’ social background, ideology (including left-right, egalitarianism and perceptions of the role of the state), personal economic circumstances and perception of the severity of the crises were introduced. The questionnaire also included a risk aversion test, in which participants had the chance to earn money. Thus, it will be possible to analyse the impact of these factors on participants support for redistribution. Thus, the design of the experiment is thus a 2x3x3. Table 2 shows the experiment design

<table>
<thead>
<tr>
<th>Luck</th>
<th>Merit</th>
<th>Social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low inequality</td>
<td>Unaffected</td>
<td></td>
</tr>
<tr>
<td>group</td>
<td>Uncertainty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full information</td>
<td></td>
</tr>
<tr>
<td>High inequality</td>
<td>Unaffected</td>
<td></td>
</tr>
<tr>
<td>group</td>
<td>Uncertainty</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Full information</td>
<td></td>
</tr>
</tbody>
</table>

The experiment was run at the end of June 2015 at the Behavioral and Experimental Sciences Laboratory (BES Lab) at Pompeu Fabra University, in Barcelona. Participants were recruited through the BES Lab experimental subjects’ pool. Participants registered in one of the several time-slots offered. Each time-slot corresponded to a group receiving one or another level of inequality
treatment. The treatment was assigned to each group randomly, ensuring that the same number of groups receive one and the other treatment.

The sample was student-based. Among participants, 96% were students. Therefore it is not a population representative sample. However, this is not a threat to our findings. In this experiment we are mainly concerned about the internal validity, which is the capacity to infer that the change in the measured outcomes can only be caused by the treatment. The key goal is to find evidence that people change their support for redistribution depending on the level of inequality, on their relative position in the income scale and on the perceived source of this inequality. Some evidence show that student samples responses tend to differ from population-representative samples. However, Belot, Duch and Miller (2010) compared the behaviour of students and a population-based sample in a variety of money-incentivised lab-games. Their findings show that students’ tendency is to behave more like homo-economicus agents, that is, prioritizing self-interest and the maximisation of their personal pay-off. Thus, if we find that our student-based sample reduces their own pay-off due to fairness considerations, we can hypothesise that the effect would be bigger in population-representative samples.

The analysis use will be based on within-subject and between-subjects comparisons. The within-subjects analysis will be used to analyse to what extent each participant change his support for redistribution depending on a) whether he is affected by the decision and on b) fairness considerations based on the source of inequality. On the other hand, between-subjects comparisons will be used to analyse whether individuals’ position in the income scale and the change in income inequality levels lead to significant variations in participants’ support for redistribution. Similarly, regression analysis will be used to assess the interaction between fairness considerations and self-interest.

4. Hypotheses and expected findings

The experiment was run in June 2015. Unfortunately, a complete analysis of the results has not yet been conducted. Provisional findings are reported in this draft paper. The working hypotheses are depicted in this section.

I expect to find clear effects of the levels of inequality and the source of such inequality. On one hand, higher support for redistribution is to be found in highly unequal income settings than in lower inequality ones. These effects will be the consequence of the interaction of self-interest and fairness considerations. Support for redistribution is expected from those below the median. Therefore, in
highly unequal settings higher support for redistribution is expected. However, as fairness considerations are also important, some level of support for redistribution is expected among those above the median.

Differences in support for redistribution depending on the source of initial inequality are also expected. This variation will be based on fairness considerations. I expect to find the highest levels of support for redistribution when the initial inequality is caused by social factors and the lowest levels of redistribution when it is caused by merit. This levels of support based on fairness considerations are expected to interact with self-interest motives. Therefore, under full-information condition, the variation will be moderated so that those at the top of the income inequality will show lower levels of support for redistribution. Similarly, under the uncertainty condition, the variation will be moderated by participants’ expected relative position in the income structure and by their risk aversion.

The working hypotheses are as follows:

H1: Higher levels of inequality lead to higher aggregate support for redistribution

H2a: Support for redistribution via taxes is higher with an income structure determined by family background than with an income structure determined by luck or merit

H2b: Support for redistribution via taxes is lower with an income structure determined by merit than with income structures determined by luck or family background.

H3a: In full-information condition, support for redistribution decreases with one’s relative position in the initial income structure.

H3b: In uncertainty condition, support for redistribution increases with one’s expected relative position in initial income structure and by participants’ risk aversion.

5. Provisional results

The results reported in this draft paper are provisional. Further analyses are needed, especially regression analysis to measure the impact of the different factors and the expected and known relative position in the income structure.

In this section I will first show the findings for the inequality level treatment. Then I will depict the findings on the variation depending on the source of inequality. Finally I will briefly describe preliminary analysis of the impact of being an unaffected decision maker in front of being an affected decision maker under uncertainty or under full-information.
5.1 Inequality structure

The level of inequality had no significant effect on participants’ support for redistribution. A series of Mann-Whitney U tests have been conducted comparing the tax choices in the high or low inequality structure of each of the nine sources of inequality and condition pairs (i.e. luck under unaffected condition or merit under full-information condition). They show no statistically significant effect in any case. Since the differences between the two groups were not statistically significant, for the rest of the analysis I will consider both groups together.

On the aggregate, the average tax rates, considered all cases together, are higher in high inequality groups that in low inequality ones. The average tax rate was 39.7 in the former case and 37.2 in the latter. Even if the differences are not statistically significant it has to be noted that in full information conditions, the tax was always higher in highly inequality groups. Contrarily, under unaffected and uncertainty condition, there was not a clear pattern. In some cases the average tax was higher in highly inequality groups and in some cases it was so in low inequality ones.

5.2 Source of inequality

Means comparisons between the average chosen tax-rates under different sources of inequality demonstrate that the demand for redistribution is significantly lower when inequality is caused by merit than when it is caused by luck or social factors. On the other hand, the variation between luck and social-factors caused inequality is lower yet statistically significant. The average tax-rate is lower for socially caused inequality, which goes against our hypothesis. These variations can be seen in Chart 1.
Within-subject analysis reveals that most participants changed their tax choices depending on the source of income. A series of Wilcoxon signed-rank test were conducted. They show statistically significant differences in almost all cases. Only the variation in the tax choices under full-information between inequalities generated by luck and inequalities generated by social factors were not statistically significant. Chart 2 illustrates the number of participants who chose a greater, lower or equal tax in each of the possible sources, controlling by the information and by the exposure to the tax conditions.
Chart 2: Within subject difference in tax choices

The chart shows how many participants chose a higher tax on the first source of each pair. For instance, in the first group (Luck-Merit under Unaffected condition), 130 participants chose a higher tax-rate when the source of income was based on luck than when it was based on merit, 49 chose a lower tax-rate, and 33 chose the same tax rate.

Within-subject variation analysis shows that a majority of people chose lower taxes for income generated by merit than by other circumstances. People tended to choose lower tax-rates when the income depended on participants’ performance in a logical reasoning test. It confirms thus hypothesis 2b. When people consider that inequality is due to individual merit, their level of support for redistribution is lower than when it is caused by factors outside one’s control.

On the other hand there are fewer participants who change their tax choices depending on whether the income is determined by luck or by social factors. The variation is lower but still significant in both unaffected and uncertainty conditions. In the full-information condition, however, the variation is not significant. The direction of the variation is contrary to hypothesis 2a. People tend to choose higher tax-rates for income generated by luck than for income dependent on social background.

Further analysis will include regression analysis that will depict how considerations re the source of the income interacts with other factors such as participants income or expected income, their ideology (left-right), their perceptions on the crisis, and other factors included in the post-treatment questionnaire.
Condition: being affected and varying levels of information

A within subject variation analysis was conducted to assess how participants changed their tax choices depending on whether they were affected by the tax or on the level of information they had re their relative position in the income scale.

The results show that less than 50% of participants changed their tax choice between unaffected and uncertainty conditions. Those who changed it, overwhelmingly tended to choose a higher tax when unaffected than when affected but without certainty of their relative position. The rest of variations were not statistically significant and show no clear pattern. It can be hypothesised that this lack of pattern is due to participants choosing taxes depending on their known or expected relative position in the income scale. Regression analysis is to be conducted. It is expected to depict and test these hypothesised relationships.
Reference List


