I PERCEIVE THEREFORE I DEMAND: THE FORMATION OF INEQUALITY PERCEPTIONS AND DEMAND FOR REDISTRIBUTION

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This paper shows that perceptions of inequality matter for demand for redistribution and investigates how individuals form their perceptions. Using data from the ISSP, we present new evidence on the significant changes of perceptions of inequality for more than 20 countries during the last three decades and how these are not in synch with changes in objective inequality. Rather than indicating misperceptions, these discrepancies reflect a broader view of inequality that for most individuals encompasses poverty, insecurity in the labor markets, availability of public goods in addition to objective income disparities. We then show that these perceptions have much stronger correlation with demand for redistribution than objective inequality, or any of the mentioned contextual variables that mold perceptions. Ideology and self-interest also contribute to demand for redistribution. Much more than those on the left, right-leaning individuals adjust their demand for redistribution in line with their inequality perceptions.

1. INTRODUCTION

This paper investigates the link between inequality and demand for redistribution by looking at how individuals form their perceptions of inequality and how these determine demand for redistribution. Most of the literature focused on explaining demand for redistribution—or, more broadly, on political support for redistributive institutions, such as the welfare state—identifies inequality as a key determinant. And, more importantly, it assumes that this inequality—usually represented by an inequality index calculated from a distribution of income of a household survey, which we call *objective* inequality—is common knowledge for all individuals, both in terms of what it exactly represents and its levels (or changes). This literature, in other words, ignores the issue of how subjective perceptions of

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inequality are formed. This is clearly a problem if there is a gap between subjective perceptions of inequality, which influence actions and choices of individuals, and objective inequality, which is used to explain those same actions by the literature. Some authors dismiss this issue, in part because of a widespread wariness towards subjective data,[1] and tend to characterize subjective assessments of inequality as individuals' *mis*perceptions rather than as something we need to understand. Mismeasurement, misconception, or simple mistakes are likely a part of the reason behind the gap between objective and subjective inequality, but we show here that they are not the whole story.

This paper makes three main contributions. The first is to describe the evolution across the last three decades of subjective views of inequality for more than 20 countries. Perhaps not surprisingly, since their transition towards market economy, people in Eastern European countries perceive their societies as being highly unequal,[2] while the reverse is true in Western Europe and in the US. Less well known is, however, the fact that these perceptions have changed significantly. Using data from the International Social Survey Programme, we show that in all the examined countries views on inequality changed and that, in some cases, they were completely transformed. In many countries, we report a quarter of the population changing its views and, in a few, even up to a third of the population altered their subjective assessments of inequality. We also highlight that changes in subjective inequality are related to changes in objective inequality, but that the link is weak. A reassessment of the hypotheses that subjective views about inequality reflect fixed attitudes or slowly shifting cultural traits, or that they are simply misperceptions of objective inequality, is thus needed.

Our second contribution is to provide such a reassessment by offering a new framework of the formation of inequality perceptions and its role on the demand for redistribution. Adapting the approach of Blinder and Krueger (2004), and extending the framework of Alesina and Giuliano (2011), we propose a simple model where: (a) demand for redistribution is a function of self-interest, views of social justice or political ideology, and perceptions of inequality; the latter represent the subjective "knowledge" of the complex phenomenon that is economic inequality; and (b) perceptions, or knowledge, of inequality are a function of exposure to objective inequality, but also to other objective macro-economic factors shaping the economic context that go beyond inequality indexes. Individuals' perceptions of inequality, in this model, encompass a broader definition of inequality that correlates not only with indicators of inequality, but also with poverty and unemployment, as well as with fairness and social mobility, own individual or household situation, and ideology.

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[1]There are some actual issues that justify economists' reluctance: in most surveys, people do not have incentives of revealing their genuine beliefs, and they are confronted by social pressure to say the socially acceptable thing. In his paper where he proposes to use subjective data, Manski (2004) notes that "[…] economists have been deeply skeptical of subjective statements; they often assert that one should believe only what people do, not what they say. As a result, the profession for many years enforced something of a prohibition on the collection of subjective data" (p. 1237).

[2]See Alesina and Fuchs-Schundeln (2007) and Giuliano and Spilimbergo (2013) and Section 3 for more details.

Our third and final contribution is to carry out an empirical analysis of the mechanisms described by this model and offer an assessment of the strength of the correlations between the various elements of the model. Specifically, in the case of demand for redistribution, we assess the importance of self-interest, ideology, and knowledge (or perceptions of inequality).

In our estimation of the formation of inequality perceptions, we highlight that the higher the unemployment rate, the poverty rate, and the Gini index, the more unequal the society is perceived. The higher the government expenditure in education—a proxy for the fairness of the system—the more equal the society is perceived. We find that an increase of unemployment equal to one standard deviation has the same impact of a standard deviation increase of poverty or of objective inequality, which highlights that individuals' inequality perceptions go beyond objective inequality. This is consistent with individuals giving more weight to the lower part of the distribution or being influenced by variables that are easier to observe. Personal circumstances also matter. Individuals who on average have worse socio-economic perspectives and opportunities (being older or female) and with current worse socio-economics status (lower education and income) tend to perceive their society as more unequal. Individuals' political ideology or views on social justice, which could affect how people acquire and process economic information, appear to have a weak influence on the formation of perceptions.

In our estimation of the demand for redistribution, perceived inequality (or subjective knowledge of inequality), ideology, and self-interest play a significant role. We show that contextual macro variables—unemployment, poverty, government expenditures, and *objective* inequality—affect demand for redistribution only through perceptions of inequality, and do not have a direct effect. This latter result supports the relevance of our framework which models explicitly the formation of perceptions and their role on generating individuals' opinions. We also find that normative views about social justice or political ideology interact with inequality perceptions. People with progressive views towards the left of the political spectrum tend to have strong views about the need for redistribution and their demand for redistribution is fairly insensitive to their perceived current inequality. In contrast, people with more conservative views vary substantially their demand for redistribution depending on their perceived inequality. Finally, self-interest becomes apparent as a motive for redistribution when individual characteristics are considered. As they are likely to be on the losing side of redistribution, people with higher income and education levels have a lower demand for redistribution, while the opposite is true for unemployed. In sum, these results, by highlighting the strong relevance of ideology -either political ideology or views on social justice-, cast some doubts on the validity of the standard view of economic agents as perfectly informed (with perfect knowledge) and driven solely by self-interest. This is in line with the findings of Blinder and Krueger (2004) and the political science literature when it states that "people often use ideology as a short-cut heuristic for deciding what position to take, when properly informing oneself is difficult" (p. 386).

The interpretation of the empirical results needs to take into account two limitations. First, the estimation of the demand for redistribution suffers from endogeneity problems to the extent that both demand for redistribution and inequality

perceptions are self-reported and depend on unobservable characteristics that are bound to be similar (for example, political views or personality traits). In other words, they are jointly determined by third factors. Second, and related to this, the framework used for the empirical analysis assumes that causality runs from inequality perceptions to demand for redistribution. One could argue, however, that the causality runs the other direction. With the observational data used here, very few variables—age, gender, a few others—can be unambiguously taken as exogenous, so any identification strategy would be quite difficult. However, at least in terms of inequality perceptions, a key variable of interest, other papers using experimental data have established the clear direction of causality from perceptions to demand for redistribution. This provides some reassurance about the interpretation of our results.

The remainder of the paper is organized as follows. The next Section provides a quick overview of the literature and presents our conceptual framework with the recursive model. Sections 3 and 4 present the data and summarize the descriptive analysis. Section 5 imposes some structure on the data and discusses our main empirical results before Section 6 concludes and highlights future research directions.

2. Perceptions of Inequality and Demand for Redistribution: A Conceptual Framework

A key objective of this paper is to assess the role of individuals' perceptions of inequality as a determinant of demand for redistribution. Most of the literature that links inequality and demand for redistribution assumes that individuals call for policy interventions because of self-interest or because of their views of social justice, and that they have a common knowledge of the inequality of the distribution of incomes, although there is a role for misperception of inequality. However, very few studies consider individuals' subjective perceptions of inequality, or how individuals form their opinion (knowledge) of inequality, and the role of this perceptions on demand for redistribution. We first summarize the available literature and then propose an estimable model in which perceptions of inequality are a determinant of demand for redistribution.

2.1. *An Overview of the Literature*

Meltzer and Richards (1981) is one of the first papers[3] of the literature linking inequality and redistribution. In their model, redistribution policy consists of a flat income tax rate and an equal lump sum transfer to all individuals, and the policy decision on the tax rate is determined by a majority vote. The main result is that the equilibrium tax rate depends on the degree of (objective) inequality, measured as the distance between the median income and the average income. This is a rather parsimonious model where preferences of individuals only include consumption. Self-interest, i.e. maximizing consumption, is the only motivation of individuals' choices for the tax rate, and inequality is exogenous. There have been many

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[3]Actually Meltzer and Richards (1981) work is related to the earlier paper by Romer (1975).

extensions of this model. Essentially these extensions consist of expanding the arguments of the utility function, thus adding motivations other than self-interest for people's choices.[4] In a first set of models, inequality is not (yet) an argument of the utility function, but it matters for choices of individuals because it affects consumption. In these models, more unequal societies may support greater redistribution to reduce, for example, high crime levels, which are usually associated with high levels of inequality. In a similar vein, the presence of externalities in education is another way through which inequality affects individuals' utility via consumption: an individual's productivity may benefit from the presence of an equally educated workforce, and thus, in order to achieve individually higher levels of income, citizens support more redistribution in a context of high inequality. In a second set of models, inequality enters as an argument of the utility function and it impacts welfare above and beyond its indirect effect on consumption (and economic growth). In this case, preferences include a view on "social justice," or the *justifiable* levels of inequality or poverty from a moral or ideological point of view.[5] When objective inequality deviates from this desired level, individuals will demand corrective redistributive measures. An alternative to adding "social justice" to individuals' preferences is the "social identity" approach (Akerlof and Kranton, 2000; Costa-Font and Cowell, 2015), which allows these preferences to be influenced by the social and cultural environment in which individuals live. In other words, preferences are interdependent and individuals care about other people, especially when these people belong to a culturally or socially homogeneous group. A "social identity" approach helps explaining, for example, why support for redistributive institutions may be lower in countries with more heterogeneous population groups (Luttmer, 2001; Alesina and Glaeser, 2004).[6]

The main idea behind these approaches—that higher inequality is associated with greater demand for redistribution of income and, ultimately, with redistributive policy outcomes—is persuasive, but faces two problems. Firstly, in the case of the basic models with self-interest as determinant, it has received limited empirical support.[7] Ignoring, or oversimplifying, demand for redistribution (or as the literature often calls it, preference for redistribution) is a shortcoming of these basic models. These models assume that redistributive policy outcomes, such as the tax

[4]This framework organizing the various contributions of this literature is due to the excellent review of Alesina and Giuliano (2011).

[5]One way to establish the justifiable level of inequality can be to use the approach of inequality of opportunity (see Roemer and Trannoy, 2016).

[6]In fact, the literature talks about a Robin Hood paradox (Choi, 2019) referring to the empirical finding that democracies with lower levels of inequality redistribute more vis-à-vis than those with higher levels of inequality. See, for example, Espuelas (2015), Moffitt *et al.* (1998), Esping-Andersen and Myles (2009), Lindert (2004). Gärtner and Prado (2016) build a case in which high inequality actually hampers redistribution. Some of these studies show that a period of equalization of incomes predates, and facilitates, the establishment of the Scandinavian welfare state. A common theme in this literature is that, using Lindert's words, "redistribution from rich to poor is at least present when and where it seems most needed" (Lindert, 2004, p. 15).

[7]See Alesina and Giuliano (2011), Costa-Font and Cowell (2015), Milanovic (2010) and reference cited therein. Milanovic (2000) argued that the lack of empirical support for the Meltzer and Richards model comes partly from misspecification, since their model refers to pre-tax, market income inequality—and not post-tax, disposable income inequality, which is usually used to empirically test the model's hypothesis.

and transfer systems, are influenced (almost) directly by the level of inequality. The mediating role of individuals' preferences is quite limited. Individuals motivated by self-interest mechanically vote for redistribution if they stand to gain from it, and the policy is thus implemented.

Secondly, demand for redistributive policy, even if it were strongly linked to inequality, it would be linked to *subjective* perceptions of inequality. Individuals base their decisions, such as supporting a more redistributive tax and transfer system, on their perceptions (or subjective knowledge) rather than on the objective inequality.[8] This would not be relevant if subjective and objective inequality were the same or, at least, almost fully aligned. However, recent evidence (Cancho *et al*., 2015a, 2015b; Gimpelson and Treisman, 2018; Choi, 2019) shows that there are gaps both in levels and in trends between these two variables. Highlighting the significance of perceptions, Gimpelson and Treisman (2018, p. 27) note that "most theories about political effects of inequality [demand for redistribution, the political participation of citizens, democratization] need to be reframed as theories about effects of perceived inequality".

Discrepancies between measured economic performance (in general, and not only specifically for inequality) and public perceptions had been highlighted in the past (Blendon *et al*, 1997; Slemrod, 2006). However, the sources of these discrepancies have not been a focus of scholarly research of economists. Clark and D'Ambrosio (2015) suggest that perceptions may deviate from objective measures because the concept of inequality that individuals have in mind is not the same as the measure of inequality commonly used by researchers. At the outset of their extensive survey they concede that: "[…] the term inequality is used perhaps rather loosely in the empirical literature. It is of interest to ask which measures of the distribution of income are the most important (to individuals) in this context: Is it (as is commonly assumed) the Gini coefficient, or rather something else?" (p. 1148). In their paper, Clark and D'Ambrosio (2015) examine income inequality by looking at any disparities in income between individuals, with special attention to the importance of the reference group. In here we argue and show empirical evidence that perceived inequality is the result of a process where information about objective inequality plays a role, but where also economic insecurity and poverty are relevant, and where these elements are combined with the specific circumstances of the individuals and their political views.

In this respect, our paper differs from a common explanation for gaps between objective and subjective variables which maintains that they originate from mistakes of the individuals. Studies on perceptions of inequality have focused on individuals' (in)ability to correctly perceive inequality (Norton and Ariely, 2011; Chambers *et al*., 2014; Niehues, 2014; Kuhn, 2015; Page and Goldstein 2016) or, correspondingly, their own position within the income distribution (Cruces *et al*., 2013; Fernandez-Albertos and Kuo, 2015; Karadja *et al*., 2017).

The literature on demand for redistribution offers, however, an exception to the dismissal of subjective data: expectations. These are clearly subjective and play an important role in explaining demand for redistribution. In concrete, expectations

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[8]Gruendler and Koellner (2017) confirm that actual inequality increases redistribution (measured as the difference between market and net Gini coefficient), however, they find an even stronger link between perceived inequality and redistribution.

of upward mobility are a key element in a few models (Piketty, 1995; Bénabou and Ok, 2001). By adding the subjective views people hold of their future position in the income distribution, these models allow to incorporate the fact that people base their voting on redistribution on their expected permanent income, not just on the current level of income. Expectations of social mobility, or "Prospects of Upward Mobility (POUM)" as Benabou and Ok (2001) call them, are, therefore, an important determinant of their demand for redistribution. In contrast with the basic Meltzer Richard model, the POUM hypothesis (or social mobility beliefs) has found some empirical support (Checchi and Filippin, 2004; Alesina and Angeletos, 2005; Rainer and Siedler, 2008; Cojocaru, 2014). These papers use subjective expectations, as reported by opinion surveys, rather than using the objective mobility in each country, the exception being Alesina and La Ferrara (2005), who look at both subjective expectations and objective measures of mobility.

In this paper we use subjective perceptions of inequality, and by explicitly modeling the mechanism through which people form these perceptions, we go one step further and try to combine the relevance of perceptions for demand for redistribution with the heterogeneous views of inequality at the level of the individuals. Our analysis relates to that of Engelhardt and Wagner (2014), who also examine the determinants of perceived inequality and conclude that it correlates with government social expenditure.

2.2. *A Conceptual Framework for Demand for Redistribution and Formation of Inequality Perceptions*

Political scientists have shown that public opinion has a major influence on many public policy decisions (Monroe, 1979; Page and Shapiro, 1983; Slemrod, 2006) and, in particular, public views of the economic situation tend to have a "pivotal role" in determining the outcome of elections—and these views may differ from objective (or reported by experts) measures (Blendon *et al.*, 1997). Addressing the issue of the *formation* of public opinion is thus a natural research focus for political scientists. A key contribution in this area is due to Zaller (1992). Challenging what at the time was the consensus, Zaller rejected the idea that survey responses are manifestation of fixed attitudes, and that deviations are simply due to measurement errors. He proposed the RAS model of the response to opinion survey, theorizing that opinion statements result from a process in which people *receive* new information, decide whether to *accept* it and then *sample* from their stock of considerations at the moment of answering questions. In Zaller's original approach, which was influenced by advances of cognitive psychology, the formation of opinions is a dynamic process where some fixed factors, such as ideology, and varying ones, such as exposure to new information, balance each other.

In this paper, we want to model demand for redistribution or, as political scientists put it, public opinion about the need of government redistributive intervention. We also want to assess how this is influenced by subjective perceptions (or knowledge) about inequality and, in turn, how these perceptions are formed. We postulate that not only demand for redistribution (as Zaller's work), but also inequality perceptions depend on fixed and varying factors, such as the changing country context. As Cruces *et al.* (2013) have clearly shown, when new information

about the distribution of income is provided, people amend their perceptions and demand for redistribution is adjusted. The causal process we propose is thus from (relevant) information to perceptions and from perceptions to demand for redistribution, allowing individual factors like different aspects of ideology to have a role.

The approach that we propose here is closest to that of Blinder and Krueger (2004) which is related to Zaller (1992). As in their paper, our framework has a recursive structure. Starting from demand for redistribution, at the individual level this is influenced by: self-interest, ideology (which we proxy by views of social justice and political ideology), and perceptions (or knowledge) of inequality, as well as a set of individual characteristics. A basic equation can be written as follows:

$$(1) \qquad DemRed_i = f\left(SI_i, ID_i, IneqPerc_i, X_i\right) + \varepsilon_{1,i}$$

where SI_i is the degree of self-interest (normally proxied by income or education levels), ID_i is ideology (as reported by individuals), $IneqPerc_i$ represents individuals' perception of inequality, and X is a vector of individual controls, such as age, gender, location of residence, and employment situation. Together with income and education, employment situation may serve also as proxy for SI_i, since income and education levels usually determine whether individuals will be on the "receiving" or on the "giving" side of redistribution.

We take self-interest and ideology (in here, political ideology or views on social justice) as exogenous and we assume that individuals' ideology, the degree of self-interest, and inequality perceptions can be correlated with each other and with X, but not with $\varepsilon_{1,i}$. In other words, we assume that controlling for ideology is tantamount to controlling for all those individual characteristics that might jointly determine perceptions and demand for redistribution, while assuming that ideology is exogenous. This is a strong assumption. We also assume, related to this, that causality runs from inequality perceptions to demand for redistribution. This assumption is supported by other papers using experimental evidence.

The second equation in the model is about the formation of perceptions of inequality. We assume that information about inequality is acquired by being exposed to a specific economic context (in concrete, unemployment, poverty, and inequality) and argue thus that the metric or the definition of inequality might differ between the researcher (who typically uses the Gini coefficient or another metric of inequality) and individuals in the society, who relate inequalities also to unemployment or to poverty, suggesting a focus on the bottom of the distribution. We also argue that perceptions of inequality depend on the fairness of the process that has generated them. In that sense, to account for (future) equality of opportunity we postulate that individuals' inequality perceptions are influenced by current government expenditures in education. A second key element of our model, as in Zeller's, is the dependence of inequality perceptions on ideology, notably the different views on social values and norms (hard work, meritocracy, circumstances, luck) spanning from left-leaning individuals to right-leaning ones.

Finally, we assume that perceptions of inequality relate also to other personal characteristics, such as employment, income, education, age, or gender. We postulate that these individual characteristics and socio-economic circumstances

influence the context to which individual have access to, and therefore their views on inequality. We write the equation as:

(2)
$$IneqPerc_i = g\left(EC_i, ID_i, X_i\right) + \varepsilon_{2,i}$$

where EC_i represents the economic context, ID_i is ideology, and X_i is the set of individual characteristics, including income and education levels. We will discuss the functional form of this relationship in Section 5.

Equation (2) differs from the model of Blinder and Krueger (2004) in an important respect. In their model, individuals have individual-specific exposures to information; in fact, for each individual, they have micro data about sources of information, quantity of information, and 'desire' to acquire information. In contrast, we assume that, conditional on individual socio-economic characteristics, everyone is exposed to the same degree to the relevant economic context, but ideology plays a role in interpreting the elements of such context. That is, faced with a same context—a high unemployment rate or a high level of objective inequality, for instance—individuals with different ideologies may form different perceptions of inequality. Similarly, given everything else constant, high earnings individuals might also perceive inequality differently.

In sum and starting from the bottom, the model says that people's exposure to a specific economic context (inequality, poverty, unemployment, and government expenditures), ideology, and their personal characteristics form their perceptions of inequality. These perceptions, in turn, influence, together again with ideology, self-interest, and other personal characteristics, their demand for redistribution.

To the extent that we are unable to completely observe ideology and self-interest, part of the correlation between these variables and demand for redistribution or inequality perceptions will be captured by the error term (for example, beliefs on fairness). In other words, even though we control for as many variables as possible, e_{1i} might still be correlated with inequality perceptions, generating issues of classical endogeneity. We also assume that causality runs from inequality perceptions to demand for redistribution, which is aligned with the existing literature that has tested this relationship using experimental data.

3. DATA DESCRIPTION

The Social Inequality surveys of the International Social Survey Programme (ISSP) are the main data source for this paper. We use all available waves covering the years 1987, 1992, 1999, and 2009. The initial sample of nine countries (1987) was expanded in each wave to reach 26 countries in 2009. The samples are representative at the country level, with sample sizes per country and year varying between 1,000 and 2,000. These surveys include almost all the information needed to estimate the model described above. They include the two dependent variables: perceptions of inequality and demand for redistribution, as well as information on political preferences and views on social justice to construct a proxy for the ideology variable; and information on income and education used to account for self-interest. Finally, they record a host of individual socio-economic
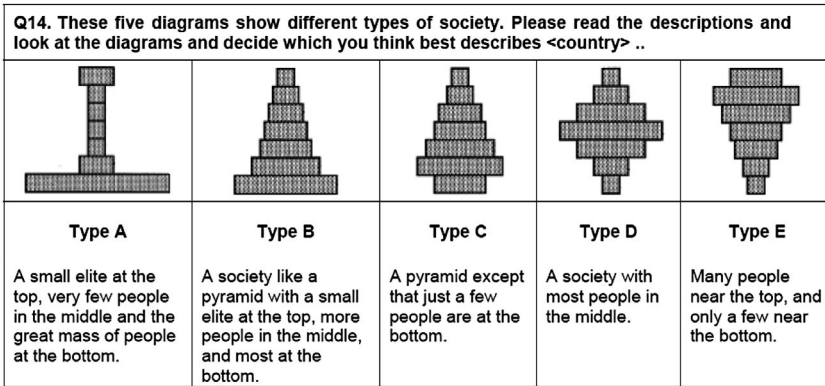
Figure 1. ISSP Question on Inequality.
Source: International Social Survey Programme.

characteristics—employment, gender, age, and location of residence—to act as additional controls. A mix of other data sets, described in detail below, are used as sources for the objective levels of inequality, poverty, unemployment, and government expenditures, which together represent the economic context variable.

In 1992, 1999, and 2009, the ISSP surveys asked individuals to choose among five different pictures the one that best described the *type* of society of the country in which they live. More in detail, the specific question and possible multiple-choice answers are shown below in Figure 1.

The diagrams and the short descriptions below each of them implies a ranking from the most unequal society, depicted by the "Type A" diagram to the most equal, "Type D," society. As shown by Gimpelson and Treisman (2018), by assuming that the area of the small rectangles composing these "pyramids" represents the size of the population group within a specific income class, it is possible to calculate the actual Gini index for each of the five types of societies represented in Figure 1. Indeed, type A has the highest Gini, with a value of 42, type B has a value of 35, type C of 30, and the most equal is type D with a Gini of 20; the Gini of type E is 21. Since the ranking in terms of polarization and inequality are the same, it is safe to assume that individuals perceiving high inequality (or high polarization) in their countries would choose Type A, while those believing that their countries are quite equal (or not polarized) would choose Type D. The empirical analysis which we will carry out excludes individuals who answered Type E, as it is unclear whether type E is more or less equal than type D given that they only differ by 1 point in the Gini index. Fortunately, very few respondents chose that option.

In the empirical analysis, answers to this question are coded as 'inequality perceptions'. We reverse the order of this categorical variable, so answers are ordered from most equal (type D) to most unequal (type A). We will also use a cardinal version of this variable using the Gini index equivalent of the diagrams.

The paper uses individual ISSP data for 21 countries for the years 1987, 1992, 1999, and 2009. These are: Australia, Austria, Bulgaria, Canada, Chile, Czech Republic, France, Germany, the United Kingdom, Hungary, Japan, Norway, Poland, Portugal, the Russian Federation, Slovak Republic, Slovenia, Spain,

Sweden, Switzerland, and the United States. Nevertheless, not all 21 countries have information for all the four years. The Appendix Section 1 describes the reason why countries where excluded and presents some robustness checks of our main results.

Besides perceptions of inequality, the ISSP also provides the second main dependent variable: individuals' demand for government redistribution. This is coded from individuals' responses from whether they strongly disagree (assigned value 1) to strongly agree (value 5) with the following statement: 'It is the responsibility of the government to reduce income differences between people with high incomes and those with low incomes'. The average value for the total sample is 3.7, which means that, on average, individuals tend to agree with this statement. A higher value of this variable is interpreted as stronger demand for government redistribution (demand for redistribution for short). Information on demand for redistribution is available for more countries and years than equality perceptions. However, we only use those country-years for which equality perceptions is also available.

In order to have some quantitative measure of ideology, we choose two different variables that capture important elements of such a multidimensional construct. The first of them, available only for a subset of respondents, corresponds to the political placement in a left-right axis of political ideology, which is a relevant explanatory factor of demand for redistribution as identified in the literature (Alesina and Giuliano, 2011). This variable corresponds either to the answers interviewees provide to a question about their position in that axis or is inferred from their affiliation or sympathy to a political party. Out of our sample of 46,894 individuals, 30 percent have missing information on political ideology and 13 percent express no ideology; thus, we have valid information of the political ideology for 57 percent of our sample—around 26,800 individuals. To overcome this sample limitation, we also consider an additional variable as an alternative measure of ideology. This additional variable is derived from answers (available for almost everyone sampled) to question 12 of the Social Inequality module of ISSP. Question 12 asks respondents to give their opinion on the importance of several factors in determining how much people ought to earn for a job. We focus on one factor: "what individuals need to support their family". This variable can be understood as a measure of beliefs in social justice, because it gauges the support for the idea that individuals should be rewarded according to their needs. Respondents who consider essential or very important that family needs be taken into account when deciding on an individual's wage level have a view of what is "socially just" that is clearly different from those who assign no importance to such factor. Respondents chose five possible answers ranging from essential to not important at all. We distinguish individuals in three groups: those who consider it essential or very important (comprising 47 percent of the sample), those who consider it fairly important (comprising 33 percent of the sample), and those who consider it not very important or not important at all (comprising 20 percent of respondents). While statistically significant, the correlation between beliefs in social justice as measured by this variable and political ideology is low: the share of individuals who consider "essential" or "very important" that wages must be adequate to support a family is higher among those who have left or center-left political views (50 percent of them believe that) than those who have right or center-right political views (41 percent),

and the share of those who consider it "not very important" or "not important at all" is lower among on the left (17 percent) than among those on the right (25 percent). This suggests that these variables capture different aspects of respondent's ideology.

In terms of the economic context, the paper uses data from different sources: (i) Gini indices on per capita household income mainly drawn from the Luxembourg Income Study Database (LIS) and, when not available, from "All the Ginis" data set of Milanovic (2019); (ii) data on unemployment rate and government expenditures are taken either from Eurostat (1999 and 2009), from the Milanovic's Household Expenditure and Income Dataset for Transition Economies (HEIDE) data (1992), or from the World Development Indicators. Finally, (iii), poverty is defined as the percentage of people living below $10 a day in 2005 PPP. The variable is calculated on income data using PovCalNet and the World Development Indicators data set.

Table 1 shows the descriptive statistics of all the variables used in the empirical part of the paper. The rest of the variables used in the empirical analysis and summarized in Table 1 refer to individual characteristics. The Table shows the percentage of individuals for which we do not observe some characteristics. The percentage of missing information ranges from 0.3 percent for age to 10 percent for income.

4. Perceptions and Demand for Redistribution: Evolution Over Time and Cross-Country Correlations

As a first step, and before running regressions, we describe the long-term evolution of the subjective perceptions of inequality, demand for redistribution, and "objective" inequality, and we also consider their simple correlations. This descriptive analysis is a contribution of the paper. In addition, we present the correlation of individuals' inequality perceptions with key economic context variables: unemployment, poverty, and government expenditure.

Starting with perceptions of inequality, Figure 2 plots the evolution of the share of the population who thinks that their country is very equal (type D) minus the share of people who think that they live in a very unequal country (type A). The bars thus represent the percentage of people who perceive their country to be equal in excess of those who perceive it to be unequal. A positive value indicates that there are more individuals who believe their country is very equal rather than very unequal, and a negative value indicates the opposite.

Some interesting patterns emerge. In former socialist countries in Europe, individuals widely believe they live in unequal societies during the whole period (1992 to 2009). This perception worsened in 1999 but was followed by an improvement in the 2000s (Figure 2a), somewhat in line with the actual evolution of income inequality in that region. Nevertheless, the percentage of individuals who believe to be living in an unequal country is larger than those who think they live in a more equal country. In contrast, perceptions of equality worsened in the 2000s in the rest of Europe, except for Scandinavian countries, while actual income inequality was relatively stable during the same period. In the United States, equality perceptions

TABLE 1
DESCRIPTIVE STATISTICS

	Average	Std.Dev	Min	Max	Obs
Main variables of interest					
Demand for redistribution (categorical: 1 "Strongly disagree"—5 "Strongly agree")	3.739	1.161	1	5	45,617
Inequality perception (categorical: 1 "most equal"—4 "most unequal")	2.646	1.087	1	4	46,929
Inequality perception (Gini index equivalent)	32.694	7.764	20	42	46,929
Self-interest					
Income group defined by country					
Individuals is in the 1st income group (lowest)	0.195	0.396	0	1	46,929
Individuals is in the 2nd income group	0.191	0.393	0	1	46,929
Individuals is in the 3rd income group	0.174	0.379	0	1	46,929
Individuals is in the 4th income group	0.178	0.382	0	1	46,929
Individuals is in the 5th income group (highest)	0.160	0.367	0	1	46,929
Missing information on income	0.102	0.302	0	1	46,929
Education					
Primary or lower secondary education	0.445	0.497	0	1	46,929
Higher secondary education	0.373	0.484	0	1	46,929
University education	0.172	0.377	0	1	46,929
Missing information on education	0.010	0.100	0	1	46,929
Ideology and beliefs					
Political ideology (categorical): far-left (1) to far-right (5)	2.868	0.999	1	5	26,846
Wages must be set according to each individual's family needs (categorical): 1 (essential) to 5 (not very important at all)	2.644	1.078	1	5	45,528
Economic context					
Unemployment rate (%)	8.697	3.297	3.103	17.857	46929
Gini index of per capita household income	29.5	5.3	20.5	50.3	46,929
Poverty headcount rate (in %, USD 10-a-day line, PPP 2005)	15.687	20.394	0.360	80.262	46,929
Govt. exp. in education (% over GDP)	4.466	0.868	2.724	6.773	46,929
Controls					
Age information					
Age in years	46.87	16.64	18	97	46,621
Missing age	0.007	0.081	0	1	46,929
Gender					

(Continues)

TABLE 1   (CONTINUED)

	Average	Std.Dev	Min	Max	Obs
Individual is a female	0.523	0.499	0	1	46,894
Location					
Urban	0.656	0.475	0	1	46,929
Rural	0.296	0.457	0	1	46,929
Missing location information	0.048	0.214	0	1	46,929
Employment status					
Individual is out of labor force	0.372	0.483	0	1	46,929
Individual is employed	0.565	0.496	0	1	46,929
Individual is unemployed	0.056	0.229	0	1	46,929
Missing information on employment	0.007	0.083	0	1	46,929

a – Perceptions of equality and demand for redistribution in Europe
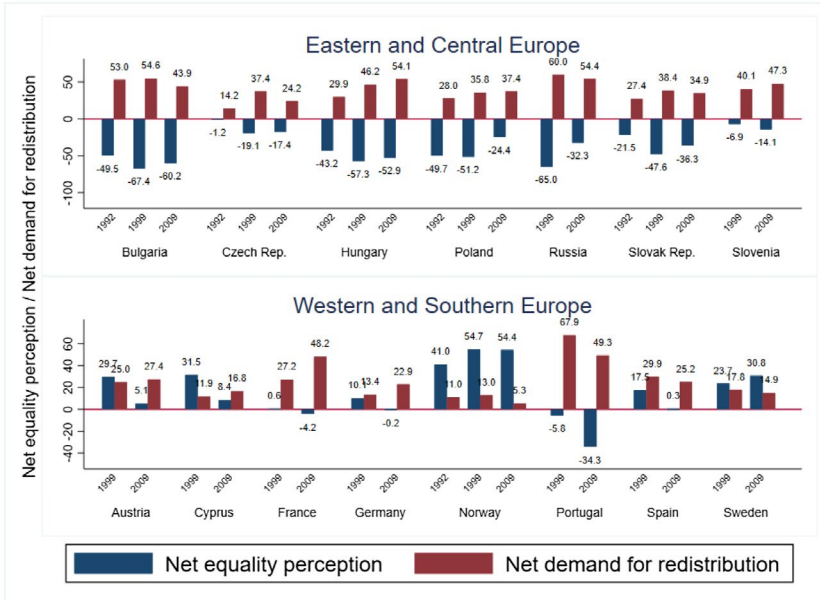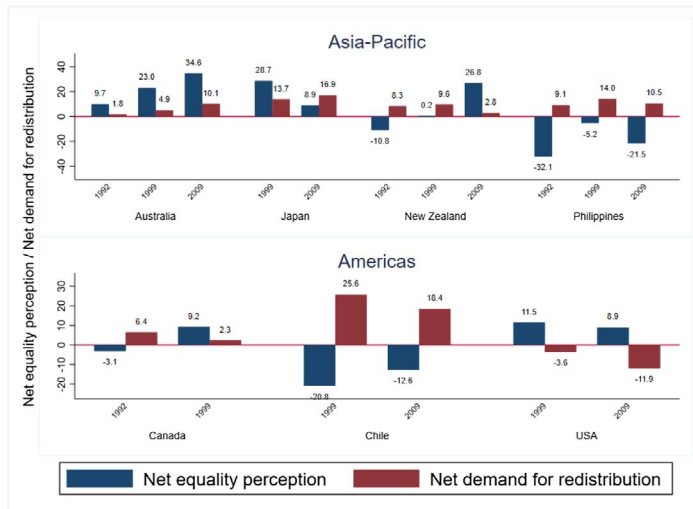
Figure 2. (A) Perceptions of Equality and Demand for Redistribution in Europe. (B) Perceptions of Equality in Other Regions.

Note: Net equality perception is equal to the percentage of people believing theirs is an equal society (type D) minus the percentage believing theirs is an unequal one (type A), based on the questions displayed in Figure 1 of the paper. Net demand for redistribution is equal to the percentage of people strongly agreeing with the statement 'it is the responsibility of the government to reduce income differences between people with high incomes and those with low incomes' minus the percentage strongly disagreeing with that statement. National weights used. *Source*: own elaboration based on ISSP Social Inequality data set. [Colour figure can be viewed at wileyonlinelibrary.com]

deteriorated from 1999 to 2009, in pace with the actual evolution of the Gini coefficient in that country.

Three messages can be highlighted from these simple descriptive graphs. First, in terms of levels, perceptions differ considerably in transition countries, where a majority of people report inequality being high, vis-à-vis other countries. This is perhaps not surprising as previous studies have drawn attention to the importance of life (past) experiences in shaping opinions. Alesina, and Fuchs-Schundeln (2007) specifically mention the role of Communism in influencing people's attitudes, beliefs, and political preferences; similarly, Giuliano and Spilimbergo (2013) emphasize the long-term impact of the historical macroeconomic environment on beliefs and policy preferences.

Second, perceptions do not seem fixed, confirming the original intuition of Zaller (1992). In fact, for some countries—like Poland and Portugal—the shifts in perceptions are quite remarkable. This could potentially be explained by a cohort effect, as younger cohorts that gradually make a bigger share of the population may have different views than that of older cohorts. Finally, there seems to be some correlation between the evolution of objective inequality and subjective perceptions, as we will show later.

The ISSP surveys of 1992, 1999, and 2009 also provide data on the evolution of demand for redistribution. "Net" demand for redistribution is defined as the difference between the share of individuals who strongly agree with the statement: "it is the responsibility of the government to reduce income differences between people with high incomes and those with low incomes" and those who strongly disagree with it. A negative value indicates that more individuals strongly disagree with the statement than strongly agreeing with it, while a positive value indicates the opposite.

Figure 2 also plots the evolution of demand for redistribution over time and across countries. As in the case of perceptions, some clear differences between countries are highlighted: European countries, both in the East and the West, have a stronger demand for redistribution than the rest of the world, particularly when compared to the United States, which is the only country in the sample that has a negative net demand for redistribution. This is not surprising given the differences in preferences between European and U.S. citizens well documented in the literature. Within Europe, Eastern European countries show a higher demand than most Western and Southern countries. Over time, demand for redistribution has also moved differently in the various countries, increasing from 1999 to 2009 in some countries (e.g. Hungary, Poland, and France), and decreasing in others (e.g. Bulgaria, Portugal, and Spain).

Using data from other sources, we can also learn about the evolution of *objective* inequality during the same period covered by the ISSP surveys. The information contained in the dataset "All the Ginis" of Milanovic (2019) indicates that, in terms of the most common inequality indicator, the Gini coefficient of disposable income, inequality has widened in Europe and United States since the end of the 1980s.

Several authors have emphasized that the increase of inequality measured from household surveys may underestimate the actual increase, as a large part of that increase occurred through a concentration of incomes at the top of the distribution

and very rich people are normally not sampled in these surveys. Indeed, using administrative (tax) data, Piketty and Saez (2014) show that inequality measured as the national income in the hands of the top 10 percent decreased considerably from 1930 to 1970, both in Europe and the United States, but it increased strongly in the United States after 1970 and to a less extent in Europe after 1980. Dynamics of inequality of the wealth distribution shows similar patterns (for example, Berman *et al.*, 2016; Gabaix *et al.*, 2016; Alvaredo *et al.*, 2017).

So far, we have presented the evolution of the three variables of interest of our study: *perceived* inequality, demand for redistribution, and *objective* inequality. We now move on to analyze the cross-country correlations between them.

The relationship between perceptions of equality and objective inequality as measured by the Gini index of per capita household income is rather weak as shown in Figure 3, panel a for year 2009. While there is a tenuous negative association—the higher the Gini index, the lower the net perceptions of equality—the variability is very high and the R^2 of a simple regression is about 0.05. Bulgaria and Spain have about the same level of income inequality, but perceptions are wildly different: in Bulgaria the percentage of individuals that think their society is very unequal is 60 percentage points larger than those who think their society is very equal, while in Spain the difference was almost zero. Similar differences can be found for other East and West European countries, where for a given value of the Gini index, East European citizens perceive their country as less equal. Another polar case is that of Chile and Slovenia: in both countries, individuals' perceptions about inequality in their society are very similar, but Chile's Gini index is actually about twice that of Slovenia.

A similar weak correlation is also found when comparing demand for redistribution and objective inequality (Figure 3, panel b). Individuals in countries with similar levels of income inequality have strongly different levels of demand for redistribution. Portugal and the United Kingdom have roughly similar levels of income inequality, but in the former the percentage of people that agree with redistribution being a government responsibility is 50 percentage points higher than the percentage of those who disagree, while in the United Kingdom that difference is less than 20 percentage points. Slovenia and Portugal have a very similar demand for redistribution, but in Slovenia actual income inequality is 10 Gini points lower than Portugal.

While demand for redistribution seems to be little correlated to objective inequality, when comparing it to perceptions of inequality the situation is completely different. As shown in Figure 4, panel c, the correlation between demand for redistribution and perceptions of inequality is striking. The more individuals perceive their society to be unequal, the more they express agreement with redistribution being a government responsibility. This evidence suggests that demand for redistribution is tightly linked to how individuals *perceive* their society to be, rather than what their society actually *is*, at least when using a common, cross-country consistent measure, i.e. the Gini index.

The fact that demand for redistribution—which eventually feeds into each country's political process—appears to be closely associated to perceptions of inequality underlines the relevance that a theory on the formation of perceptions has. As a prior, we analyze in the three panels of Figure 4 the correlation between

Panel a. – Perceptions of equality and Gini index   Panel b. – Demand for redistribution and Gini index
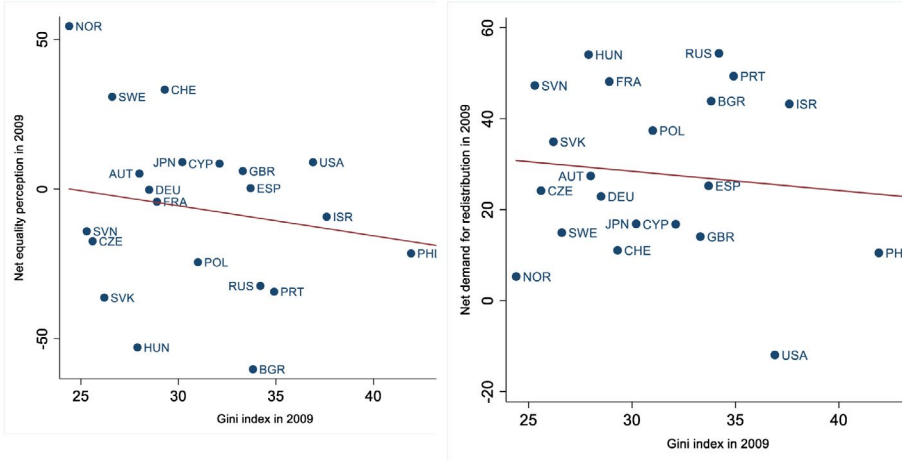
Panel c. – Demand for redistribution and perceptions of equality
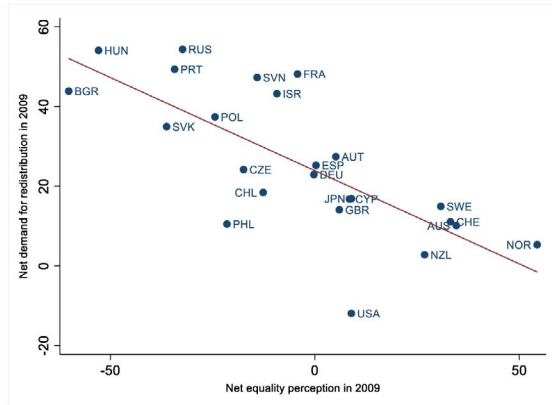

Figure 3. Perceptions of Equality, Demand for Redistribution and Gini Index, 2009.

Note: Net equality perception is equal to the percentage of people believing theirs is an equal society minus the percentage believing theirs is unequal. National weights used. Net demand for redistribution is equal to the percentage of people strongly agreeing with the statement 'it is the responsibility of the government to reduce income differences between people with high incomes and those with low incomes' minus the percentage strongly disagreeing with that statement. National weights used. Gini index estimated on per capita household income. Source: own elaboration based on ISSP Social Inequality data set; Gini indices from Bussolo *et al.* (2018) and Milanovic (2019) [Colour figure can be viewed at wileyonlinelibrary.com]

perceptions of equality and a set of variables that make up the economic context in which individuals form their opinion about inequality: unemployment rate, poverty headcount rate, and government expenditure on education. The latter can be understood as a broad proxy of the equalization of opportunities through government action.

Perceptions of inequality correlate particularly well with the poverty headcount rate (the R^2 of a linear fit is about 0.42) and somewhat with the
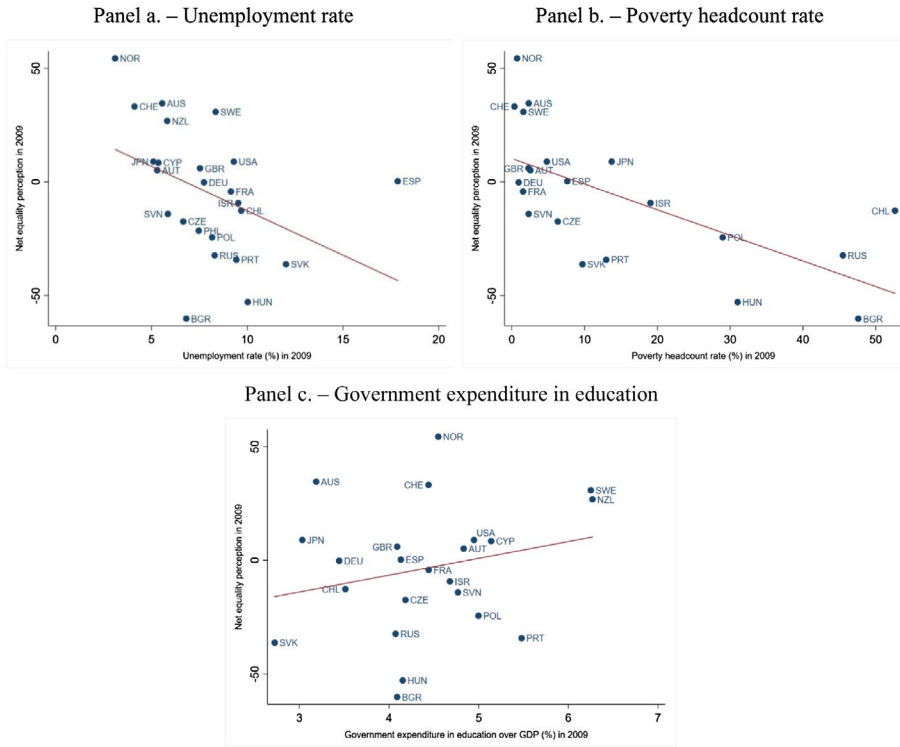
Figure 4. Correlation Between Perceptions of Equality and Other Country Level Variables.
Note: Net equality perception is equal to the percentage of people believing theirs is an equal society minus the percentage believing theirs is an unequal one. National weights used. Gini index estimated on per capita household income. Poverty headcount rate is estimated as the percentage of individuals falling below the poverty line of USD 10 at PPP (2005). *Source*: own elaboration based on ISSP Social Inequality data set and World Development Indicators (World Bank) [Colour figure can be viewed at wileyonlinelibrary.com]

unemployment rate (linear fit R^2 of 0.17), but not so well with government expenditure on education (linear fit R^2 of 0.05). In any case, it interesting to point out that from a cross-country point of view, poverty and unemployment rates seem to explain more of the variation in perceptions of inequality than then Gini index of income inequality. It seems that individuals' inequality definition may include income insecurity (unemployment) and may focus on the bottom of the distribution (poverty).

The next Section of the paper goes beyond these stylized facts into a more detailed empirical analysis, which includes not only country level variables but also individual characteristics. Our approach follows the model described in Section 2. Its implementation will be in the reverse order, from "causes" to "effects," namely we first explain the formation of perceptions of inequality, and then look at the role of these perceptions on demand for redistribution. The model includes country fixed effects and, in contrast with the stylized facts presented above, it, therefore, exploits within country variation rather than cross-country variation.

5. Results of the Regression Analysis

5.1. *Empirical Approach*

Using the model presented in Section 2, and starting from the formation of inequality perceptions, the specific equation estimated here is:

$$IneqPerc_{i,t,r} = \alpha_{i,t,r} + I_k \left(\beta_{1,k} UR_{t,r} + \beta_{2,k} P_{t,r} + \beta_{3,k} Gini_{t,r} + \beta_{4,k} Exp_{t,r} \right) + \sum_{j=5}^{J} \beta_j X_{i,t,r} + \delta_t + \mu_r + \varepsilon_{2,i,t,r}$$

[Ideology]   [Economic Context   ]   [Individual charact.] [FE time, country]

(2b)

where $IneqPerc_{i,t,r}$ represents inequality perceptions of individual i, in year t, in country r. I_k is an indicator value which takes value of 1 if individual i is of ideology type k, and zero otherwise. This specification assumes that for each ideology type k there is a different set of coefficients ($\sum_{l=4}^{L} \beta_l$) for all economic context variables. In other words, it assumes that individuals' ideology shapes the influence that the economic context has on individuals' perceptions. The empirical analysis takes inequality perceptions as an ordered variable ranging from (1) (most equal, type D) to 4 (most unequal, type A) and accordingly regression (2b) is estimated with an Ordered Logit model. In the appendix Table A.3, however, we present robustness of our baseline specification to using the cardinal measure of inequality perceptions, where a value of the Gini index is associated to each category following Gimpelson and Treisman (2018) and estimating with OLS. The regression includes a set of country economywide characteristics that represents the overall economic context. The Gini index alone might not encompass individual's perceptions of inequality if, for example, they place more weight to the bottom of the distribution (the poorest) or to income volatility (insecurity). To account for this, the regression also includes poverty headcount ($P_{t,r}$) and unemployment rate ($UR_{t,r}$) in the country. In addition, one may argue that the Gini index is not a variable easily observable—people seldom observe absolute inequality, i.e. differences in standard of living among rich and poor citizens, and relative inequality, the variable measured by the Gini index, is even more difficult to observe. Thus, individuals form their perceptions about the level of inequality in a country by also using variables that correlate with the Gini index and are easier to observe. Furthermore, we argue that inequality perceptions might also depend on how these have been generated, i.e. about the *fairness* of the process. To capture this, the regression includes yearly government expenditures on education ($Exp_{t,r}$), which can be seen as investment in equal opportunities that in turn generate future equality in outcomes.

Individuals facing the same economic context may yet have different inequality perceptions, depending on the circumstances they are exposed to. Specification (2b) includes a set of individual characteristics ($X_{i,t,r}$) that we postulate shape perceptions of inequality: age, gender and employment status, and variables related to own opportunities and uncertainties, namely education and income. In order not to lose observations, the regression analysis includes a dummy variable when there is a missing value on these variables. Missing values are present in 10.1 percent of the sample for income, 4.8 percent for location, 1 percent for education, 0.7 percent

for employment and 0.6 percent for age. The inclusion of this dummy variable allows us to control for possible unobservable characteristics that correlate with our dependent variable as well as with the fact that the information is missing. Nevertheless, we are unable to say much about this correlation. Finally, the regression includes a set of country and year fixed effects (δ_t and μ_r) and the usual error term ($\varepsilon_{1,i,t,r}$). Since some of the independent variables are clustered at the country level for each year, errors are thus bound to be correlated within each cluster and thus our results show clustered standard errors at the same level.

Moving to the demand for redistribution, the exact specification of equation (1) of the model is as follows:

$$DemRed_{i,t,r} = \alpha_2 + \gamma_1 IneqPerc_{i,t,r} + \gamma_2 ID_{i,t,r} + \gamma_3 IneqPerc_{i,t,r} * ID_{i,t,r} + \gamma_4 SI_{i,t,r} + \sum_{j=5}^{J} \gamma_j X_{i,t,r} + \delta_t + \mu_r + \varepsilon_{1,i,t,r}$$

[Inequality Perceptions]   [Ideology   ]   [Self - interest] [other indiv.char.] [FE time country]

(1b)

where $SI_{i,t,r}$ represents individual characteristics, notably income and education, proxying for self-interest motives, and ideology ($ID_{i,t,r}$) enters additively as well as interacted with inequality perceptions. The relevance of the ideology variable should not be underrated. Since both demand for redistribution and perceptions of equality are subjective variables, they are bound to depend on some common unobservable individual characteristics, such as political opinions and fairness beliefs. For example, one's perceptions on inequality as well as one's demand for redistribution might be both shaped by the type of media the individual reads or their views on fairness. For the case of equation (1b) this would mean that the independent perceptions variable ($IneqPerc_{i,t,r}$) would correlate with the error term ($\varepsilon_{1,i,t,r}$), resulting in omitted variable bias and leading to the classical endogeneity problem. Controlling for ideology and as many controls as possible reduces part of this bias. This, however, remains a limitation of the analysis that cannot be addressed with the current data at hand. In terms of reverse causality, however, the experimental literature provides evidence of a clear direction of causality from perceptions to demand for redistribution.

Demand for redistribution is an ordered variable ranging from 1 if the individuals strongly disagrees that it is responsibility of the government to reduce income differences to 5 if the individual strongly agrees with this statement. Consequently, we regress equation (1b) with an Ordered Logit model and, as for inequality perceptions, we cluster errors at the country—year level.

5.2. *Explaining Perceptions of Inequality*

We start with regressing equation (2b) in which perceptions of inequality are regressed against a set of contextual variables as well as individual characteristics. In a first analysis, we will not introduce the interaction term between ideology and the economic context and we will assume that such context translates into inequality perceptions similarly for all individuals. The analysis is based on individual data, and therefore exploits variation across individuals within a country-year, while clustering standard errors at the country-year level to account for the clustered nature of data.

The first column of Table 2 presents the specification which includes all the contextual country-year-level economic variables. The sign of the correlations is as expected, and all four coefficients are precisely estimated. The higher the unemployment rate, the Gini index, and the poverty rate, the more unequal society is perceived. This is not surprising given the cross-country correlations found before. Additionally, the partial correlation coefficient of the government expenditure in education is negative. Under the assumption that this variable may capture some degree of *future* equality of opportunities, the correlation is not surprising: individuals perceive society to be less unequal the lower the inequality of opportunities of the next generation. Introducing all the contextual variables together may be problematic, from an econometric point of view, given the presence of substantial collinearity between them. The following four columns of Table 2 correspond to specifications which introduce, separately, each of the contextual variables to address this issue. The partial correlations found in the first specification persist except for the one corresponding to the Gini index, which is very small and not statistically different from zero. This finding suggests that the Gini index may be less relevant or more difficult to "observe," while poverty and unemployment, are easier to understand and directly observe or experience. However, the fact that the correlation is significant when conditioning by the whole set of contextual variables indicates that it still has some explanatory power. These results hold for additional measures of inequality such as the Theil index (results available upon request).

We move next to discuss the economic significance of our results, using specification 1, which pools all individuals together irrespective of their ideology or beliefs and considers the four contextual variables simultaneously. The marginal effects of a one standard deviation increase in these variables is plotted in Figure 5. The magnitude of the effects seems to be roughly similar for all variables: a one standard deviation increase in the unemployment rate (3.4 percentage points) is associated with 3.4 percentage points increase in the probability of describing society as type A (the most unequal in the four diagrams) and a 3 percentage point decrease in the probability of describing society as type D (the least unequal in the four diagrams). In the case of the poverty headcount rate, the changes in probability associated to a one standard deviation increase are +3.7 percentage points and −3.3 percentage points respectively, and in the case of the Gini index these are +2.5 percentage points and −2.1 percentage points, respectively. When looking at government expenditures on education, the effect of a one standard deviation increase is slightly smaller in magnitude, but opposite in sign, as expected: the probability of describing society as type A decreases by 2.5 percentage points and the probability of describing society as type D increases by 2.2 percentage points. In sum, these results show that, from an individual's point of view, perceptions about the income distribution are affected in a very similar way by contextual macro variables, with actual income inequality (as measured by the objective Gini index) being only one of several.

Many of the individual characteristics included in all specifications in Table 2 show precisely estimated coefficients, indicating the importance that many of these variables have in shaping perceptions. The coefficients are consistent across the different specifications and are mostly not statistically different across them.

TABLE 2
INEQUALITY PERCEPTIONS (GINI INDEX EQUIVALENT), BENCHMARK TABLE

Dep. var.: Inequality Perceptions Ordered Logit Estimation	Whole sample				
	(1)	(2)	(3)	(4)	(5)
Unemployment rate	0.065*** (0.017)	0.059*** (0.018)			
Gini index (per capita household income)	0.029** (0.014)		−0.000 (0.029)		
Poverty headcount rate	0.011** (0.005)			0.020*** (0.004)	
Govt. exp. in education	−0.184** (0.093)				−0.233** (0.098)
Age					
Ln (age)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)	0.007*** (0.001)
Gender					
Female	0.068*** (0.023)	0.069*** (0.023)	0.066*** (0.023)	0.065*** (0.023)	0.064*** (0.023)
Residence: reference group, urban residence					
Rural residence	−0.004 (0.036)	−0.005 (0.035)	−0.010 (0.035)	−0.012 (0.035)	−0.010 (0.035)
Missing residence	−0.235*** (0.077)	−0.313*** (0.095)	−0.286*** (0.095)	−0.205*** (0.075)	−0.255*** (0.087)
Education: reference group, primary or lower secondary					
Higher secondary	−0.228*** (0.032)	−0.232*** (0.032)	−0.229*** (0.032)	−0.224*** (0.032)	−0.225*** (0.032)
University	−0.529*** (0.049)	−0.538*** (0.049)	−0.532*** (0.048)	−0.532*** (0.048)	−0.522*** (0.048)
Missing education	−0.185*** (0.094)	−0.226** (0.096)	−0.259*** (0.097)	−0.259*** (0.097)	−0.244** (0.096)
Employment status: reference group, out of labor force					
Employed	0.168*** (0.026)	0.169*** (0.026)	0.169*** (0.027)	0.170*** (0.027)	0.169*** (0.027)

(Continues)

TABLE 2 (CONTINUED)

Dep. var.: Inequality Perceptions Ordered Logit Estimation	Whole sample				
	(1)	(2)	(3)	(4)	(5)
Unemployed	0.328***	0.330***	0.347***	0.337***	0.351***
	(0.050)	(0.051)	(0.051)	(0.050)	(0.051)
Missing employment status	0.166	0.140	0.151	0.173	0.174
	(0.139)	(0.147)	(0.152)	(0.146)	(0.148)
Income group: reference group, lowest income group					
2nd income group	−0.076**	−0.062*	−0.073**	−0.080**	−0.088**
	(0.035)	(0.035)	(0.035)	(0.035)	(0.035)
3rd income group	−0.121***	−0.124***	−0.120***	−0.118***	−0.119***
	(0.035)	(0.034)	(0.035)	(0.035)	(0.035)
4th income group	−0.245***	−0.232***	−0.238***	−0.247***	−0.251***
	(0.033)	(0.035)	(0.035)	(0.035)	(0.035)
Highest income group	−0.426***	−0.410***	−0.415***	−0.425***	−0.428***
	(0.050)	(0.049)	(0.050)	(0.050)	(0.051)
Missing income group	−0.093**	−0.082*	−0.091**	−0.091**	−0.101**
	(0.045)	(0.045)	(0.046)	(0.045)	(0.046)
Observations	46598	46598	46598	46598	46598
Pseudo-R²	0.106	0.105	0.104	0.106	0.105

Notes: Ordered logit regressions where the dependent variable is the perceptions of inequality, expressed as the type of diagram that best describe society. The dependent variable is ordered from type D (most equal) to A (most unequal). Country and year dummies included in all regressions but not reported. Clustered standard errors at the country-year level in parentheses.
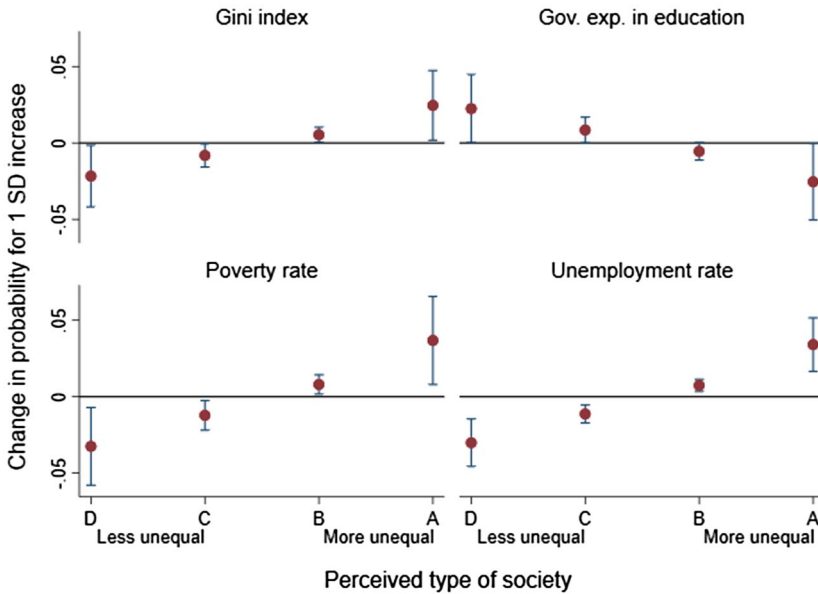 *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

Figure 5. Marginal Effects of Contextual Variables On Perceptions.
Notes: This Figure plots the marginal effect of a one standard deviation increase in the contextual macro variables on the probability of choosing a given type of diagram (A, B, C, D) as the best description of society—with type D being the most equal and type A the most unequal. The specification used corresponds to column 1 of Table 2 and marginal effects are estimated at the mean for all variables. Lower and upper bounds correspond to the 95% confidence interval. [Colour figure can be viewed at wileyonlinelibrary.com]

Everything else constant, individuals who on average face worse socio-economic perspectives and opportunities (being older or female) and have current worse socio-economics status (lower education and income) perceive their country as more unequal. Individual circumstances influence information access, who they meet and who they befriend. This is, individuals observe the income distribution of their reference group more accurately than all the income spread in their country. In addition, the lower equality perception of women, everything else constant, could be related to their higher risk aversion as compared to men (e.g. Borghans *et al.*, 2009). The coefficients for education, employment status, and income are large and precisely estimated. In other words, everything else constant, higher educated individuals perceive their society as being more equal. This might be related to the fact that their reference group is at the top of the income distribution and thus are unable to see with precision all income spread in their country. In all the diagrams showed to the respondent to illustrate the different income distributions (see Section 3 on the ISSP question used), the thicker part of the distribution is at the half bottom of the income distribution. This might imply that individuals with a richer reference group will tend to choose diagrams with more people in the middle, i.e. less inequality; while the opposite is true for the others. This argument is also consistent with the negative correlation between income and perceptions of inequality. Income in the sample is defined in five income brackets that are country

specific. The income coefficients show a monotonically increasing effect in which the higher the income group the individuals are in, the more equal they believe their country is. Consistently with the above argument, belonging to the highest income group in your country has a similar effect as having university education. Similarly, everything else constant, unemployed individuals perceive the income distribution to be more unequal than those employed or not in the labor force.

We explore the role of ideology in Tables 3 and 4. In our empirical specification ideology works as a type of "filter" which modifies the correlation between the economic context and perceptions of inequality. As mentioned in Section 3, given the multidimensional nature of ideology, we will focus on two variables that capture some elements that are particularly relevant to the study of inequality perceptions and demand for redistribution—political ideology and beliefs on social justice. Our analysis will proceed, thus, in two steps. In the first one, we carry out the analysis for the share of the sample (57 percent) for which political ideology is available. Results are presented in Table 3. In the second step we expand the analysis to the whole sample using our second variable—beliefs on social justice as captured by the relevance of family needs in determining wages. Results are presented in Table 4. In both cases, to study the role of ideology we expand the benchmark (column 1 in Table 2) specification by interacting the macro contextual variables with dummy variables indicating the political ideology or specific beliefs on social justice. The empirical specification of equation (3) calls for ideology to be interacted with all the variables in the model, however, we focus on a specification which interacts only the four contextual macro variables in order to maximize statistical power. Empirical results of the benchmark specification estimated separately for the sample of individuals in the different ideological subgroups (available upon request) show that the coefficients associated to individual characteristics are very similar across political ideology.

The layout of Table 3 is the following: the first two rows present the coefficients of the macro variables estimated in the benchmark specification for the whole sample (same as specification 1 in Table 2) and for the sample which has non-missing political ideology (57 percent of the whole sample). The following three rows present the coefficients of each macro variable and its interactions with political ideology dummies. The coefficients in these last three rows are estimated in a single specification. The coefficients for individual characteristics are not included in this Table for brevity since they do not differ substantially from those presented in Table 2.

The results show, first of all, that within the sample of individuals for whom political ideology information is available, the effect of macro contextual variables on inequality perceptions in somewhat different from the overall sample. In particular, the partial correlation with inequality perceptions of the Gini index and the poverty headcount are imprecisely estimated. In the case of the Gini index, the coefficient is half the magnitude than for the overall sample, while in the case of the poverty headcount rate the coefficient drops to close to zero. The partial correlation coefficients of unemployment rate and government expenditure in education are larger in magnitude than for the whole sample and remain statistically significant. Given that the drivers of missingness of political ideology in the ISSP sample are not understood, we refrain from drawing conclusions about

TABLE 3

POLITICAL IDEOLOGY AND INEQUALITY PERCEPTIONS

| Estimation Specification | Dep. var.: Inequality Perceptions Ordered Logit Estimation | Macro Contextual Variables (Explanatory Variables) | | | | |
		Unemployment Rate	Gini Index	Poverty Headcount Rate	Govt. Exp. in Education	Sample Size
Benchmark specification	Whole sample	0.065*** (0.017)	0.029** (0.014)	0.011** (0.005)	-0.184** (0.093)	46598
Benchmark specification	Non-missing ideology sample	0.085*** (0.021)	0.015 (0.013)	-0.004 (0.004)	-0.396*** (0.078)	26717
Ideology interactions specification	Level (reference category: center)	0.088*** (0.016)	0.019 (0.012)	-0.005 (0.005)	-0.505*** (0.080)	26717
	Interaction with left-wing dummy	-0.003 (0.008)	-0.007 (0.005)	-0.000 (0.005)	0.103*** (0.024)	
	Interaction with right-wing dummy	-0.005 (0.008)	-0.020*** (0.006)	0.002 (0.004)	0.105*** (0.027)	

Notes: Ordered logit regressions where the dependent variable is the perceptions of inequality, expressed as the type of diagram that best describe society. The dependent variable is ordered from type D (most equal) to A (most unequal). The first row corresponds to the result of the benchmark specification (column 1, Table 2) estimated on the whole sample, while the second row corresponds to the result of the same specification estimated on the sample of observations with non-missing data on the political ideology variable (individuals that answer "no political preference" are counted as missing). The last three rows correspond to the results of a single specification with interacted ideology dummies: one for those in the far-left or left (values of 1 and 2 in the left-right scale) and one for those in the right or far-right (values of 4 and 5). The reference category corresponds to those in the center of the political spectrum (value of 3). Country and year dummies and individual characteristics included in all regressions but not reported. Clustered standard errors at the country-year level in parentheses.

*p < 0.10, **p < 0.05, ***p < 0.01.

TABLE 4
BELIEFS ON SOCIAL JUSTICE AND INEQUALITY PERCEPTIONS

| Dep. var.: Perceived Gini | | Macro Contextual Variables (Explanatory Variables) | | | | |
		Unemployment Rate	Gini Index	Poverty Headcount Rate	Govt. Exp. in Education	Sample Size
Benchmark specification	Whole sample	0.065*** (0.017)	0.029** (0.014)	0.011** (0.005)	−0.184** (0.093)	46598
Benchmark specification	Nonmissing sample	0.065*** (0.017)	0.032** (0.014)	0.011** (0.005)	−0.194** (0.095)	45221
Interactions specification (Importance of family needs in rewarding individuals)	Level (reference category: fairly important)	0.066*** (0.017)	0.030** (0.014)	0.012** (0.005)	−0.166* (0.093)	45221
	Interaction with dummy (Essential or very important)	−0.007 (0.010)	0.007* (0.004)	−0.004* (0.002)	0.020 (0.024)	
	Interaction with dummy (Not very important or not important at all)	0.008 (0.011)	−0.004 (0.005)	0.009*** (0.002)	−0.034 (0.028)	

Notes: Ordered logit regressions where the dependent variable is the perceptions of inequality, expressed as the type of diagram that best describe society. The dependent variable is ordered from type D (most equal) to A (most unequal). The first row corresponds to the result of the benchmark specification (column 1, Table 2) estimated on the whole sample, while the second row corresponds to the result of the same specification estimated on the sample of observations with non-missing data in the variable which captures the importance of family needs. The last three rows correspond to the results of a single specification with interacted dummies (one for those who consider family needs "essential" or "very important" and one for those who consider them "not very important" or "not important at all"). The reference category corresponds to those who consider it "fairly important". Country and year dummies and individual characteristics included in all regressions but not reported. Clustered standard errors at the country-year level in parentheses.

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

the differences with the overall sample, but we will focus on the differences emerging between the benchmark specification and the ideology-interacted specification for the restricted sample. In this sense, the unemployment rate seems to have the same effect on perception across the political spectrum, while in the case of the Gini index the overall effect on the inequality perceptions of those on the right is an estimated zero (i.e. $-0.020 + 0.019$, although this last value is imprecisely estimated), with the effect for those in the left and the center positive in magnitude but not statistically significant. This last finding suggests that, at least for those on the right, objective income inequality doesn't seem to play any role in explaining their perceptions of inequality. In the case of the poverty headcount rate, the lack of statistically significant correlation is common across the political spectrum. Lastly, individuals in the center of the spectrum seem to be the most sensitive to government expenditure in education as an explanatory factor of inequality perceptions, with individuals in the left and the right showing a smaller effect, although the differences are not very large.

A main limitation of the above analysis is that the sample size gets significantly reduced because the political ideology variable is missing for many individuals. This limitation is not present when using our second measure of ideology, which measures respondents' beliefs on social justice. As mentioned in Section 3, this measure is derived from the answer to question 12 in the ISSP questionnaire, which asks interviewees about the importance of 'what is needed to support a family' in determining how much people ought to earn. Table 4 replicates the layout of Table 3. The results show that unemployment rate and government expenditures in education have the same effect on perceptions across individuals with different beliefs on social justice, but statistically significant differences exist for the effects of the Gini index and the poverty headcount rate. Objective inequality seems to be slightly more relevant as an explanatory factor of perceptions for those who consider family needs important when deciding individuals' wages, while poverty appears to be more relevant for those who consider family needs not important. The difference, however, are small.

The evidence presented in Tables 3 and 4 suggests that the formation of inequality perceptions depends on individuals' ideas, although differences across individuals with different ideology are not large. In other words, although supporting the analytical framework described earlier, differences are not substantial. In other words, although changes in the macroeconomic context may not necessarily translate into identical changes in perceptions, since these are mediated by individuals' ideology, differences are small.

5.3. *Explaining Demand for Redistribution*

The analytical framework described in Section 2 argues that demand for redistribution is influenced by perceptions of inequality but also by individuals' ideological beliefs and their self-interest. We start our empirical analysis by assessing whether, beyond those individual variables, the contextual variables—unemployment, poverty, and objective inequality—are correlated with demand for redistribution. In other words, we start from the standard framework in the literature by explaining demand for redistribution with objective inequality, but we extend it to

other contextual variables. Government expenditures on education, however, are not included among the contextual variables because they are one of the redistributive tools in the hands of the government, so it is not appropriate to include it as an explanatory variable of redistributive demand. The results of an ordered logit estimation of demand for redistribution with contextual variables as regressors is presented in column 1 of Table 5. The dependent variable—demand for redistribution—is measured in categories that range from 1 (individual strongly disagrees it is the responsibility of the government to reduce income differences) to 5 (individual strongly agrees).

The coefficients associated to the unemployment rate and the poverty headcount are very small and imprecisely estimated. The coefficient of the Gini index on demand for redistribution is also imprecisely estimated, but it is not small in size. While most of these variables were shown to be important determinants of inequality perceptions (Table 2), they appear to have no impact on demand for redistribution, as already suggested by our analytical framework (equation (1)). As also suggested in our empirical framework, some individual characteristics do correlate with demand for redistribution and they are in line with self-interest being a substantive driving force: individuals with higher income have a statistically significant lower demand for redistribution than those with lower incomes. This is mirrored by more educated individuals having a lower demand than the less educated, and by the unemployed having a higher demand than the employed. These correlations reinforce the importance of self-interest as an explanatory factor of demand for redistribution. These coefficients remain unchanged when we introduce inequality perceptions (column 2), and therefore we argue that the correlations point to self-interest, rather than information access.

In the second step, we use equation (1b) as the regression specification and introduce individuals' reported inequality perceptions, while controlling for the objective economic context variables. In order to ease the interpretation of the role of inequality perceptions on demand, we use the cardinal measure that translates the pictures depicted in Figure 1 to values of the Gini index following Gimpelson and Treisman (2018). As expected, and in line with Gimpelson and Treisman (2018), the correlation between perceptions of inequality and demand for redistribution shown in Table 5 is positive, large, and precisely estimated. A one standard deviation increase in perceptions of inequality (+7.7 Gini equivalent points) is associated with a 5 percentage point increase in the probability of strongly agreeing with demand for redistribution, a 2.4 percentage points decrease in disagreeing, and a 1.3 percentage points decrease in strongly disagreeing. This correlation is robust to including political ideology as an additional regressor (column 2 of Table 6), which also shows that the more to the right, the less strong is demand for redistribution. In fact, the coefficient of inequality perceptions remains identical, even if the sample size is reduced by 43 percent due to missing observations of ideology.

In other words, demand for redistribution does not depend on the objectively measured economic context, but on how individuals perceive this context and in concrete inequality. In other words, individuals' demands depend, notably, on the concept individuals have of inequality, which is shaped not only by the income inequality, but also by other macroeconomic measures that determine the income distribution and uncertainties (this is, poverty and unemployment) as well as on the

TABLE 5
DEMAND FOR REDISTRIBUTION

Dep. var.: Demand for Redistribution Ordered Logit Estimation	Whole Sample	
	(1)	(2)
Unemployment rate	0.009	0.003
	(0.031)	(0.031)
Gini index (per capita household income)	−0.025	−0.032
	(0.029)	(0.028)
Poverty headcount rate	−0.003	−0.005
	(0.003)	(0.003)
Inequality perceptions (Gini index equivalent)		0.036***
		(0.003)
Age		
Ln (age)	0.003**	0.002*
	(0.001)	(0.001)
Gender		
Female	0.224***	0.218***
	(0.030)	(0.029)
Residence: reference group, urban residence		
Rural residence	0.140***	0.142***
	(0.030)	(0.029)
Missing residence	−0.276***	−0.246***
	(0.095)	(0.091)
Education: reference group, primary or lower secondary		
Higher secondary	−0.366***	−0.340***
	(0.042)	(0.044)
University	−0.626***	−0.562***
	(0.080)	(0.083)
Missing education	−0.139	−0.106
	(0.085)	(0.080)
Employment status: reference group, out of labor force		
Employed	0.035	0.010
	(0.028)	(0.027)
Unemployed	0.215***	0.177***
	(0.054)	(0.053)
Missing employment status	−0.124	−0.155
	(0.152)	(0.148)
Income group: reference group, lowest income group		
2nd income group	0.026	0.037
	(0.045)	(0.044)
3rd income group	−0.152***	−0.137**
	(0.059)	(0.056)
4th income group	−0.322***	−0.292***
	(0.068)	(0.065)
Highest income group	−0.728***	−0.682***
	(0.076)	(0.072)
Missing income group	−0.405***	−0.398***
	(0.057)	(0.056)
Observations	45307	45307
Pseudo-R^2	0.068	0.074

Notes: Ordered logit regressions where the dependent variable (demand for redistribution) takes values 1 (strongly disagree that government should reduce income differences), 2 (disagree), 3 (neither agree nor disagree), 4 (agree) and 5 (strongly agree). Country and year dummies included in all regressions but not reported. Clustered standard errors at the country-year level in parentheses.

*$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

TABLE 6

DEMAND FOR REDISTRIBUTION, PERCEPTIONS OF INEQUALITY AND IDEOLOGY

Dep. Var: Demand for Redistribution	(1)	(2)	(3)	(4)
Inequality perceptions (Gini index equivalent)	0.036*** (0.003)	0.036*** (0.002)	0.002 (0.008)	0.020*** (0.006)
Left-right ideology (1 = far left, 5 = far right)		−0.398*** (0.038)	−0.769*** (0.072)	
Left-right ideology × Inequality perceptions (Gini index equivalent)			0.012*** (0.002)	
Importance of family needs (1 = not important at all, 5 = essential)				0.525*** (0.049)
Importance of family needs × Inequality perceptions (Gini index equivalent)				−0.006*** (0.002)
Observations	45307	26055	26055	44111
R^2	0.074	0.088	0.089	0.086

Notes: Ordered logit regressions where the dependent variable (demand for redistribution) takes values 1 (strongly disagree that government should reduce income differences), 2 (disagree), 3 (neither agree nor disagree), 4 (agree) and 5 (strongly agree). Country and year dummies and individual characteristics included in all regressions but not reported. Clustered standard errors at the country-year level in parentheses.

   *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$.

immediate context they are in contact with (which depend on their income, education, and other socio-economic characteristics). In addition, demand for redistribution depends also on ideology and on self-interest and is, therefore, lower for those who are on the losing side. This last finding could also be driven by "social identity".

   In the next step, we interact inequality perceptions with ideology (column 2, Table 6), which reduces the coefficient of inequality perceptions on demand for redistribution virtually to zero, leaving all the correlation between inequality perception and demand for redistribution dependent on individuals' ideology. This suggests that ideology exert not only a direct, but also an indirect effect on demand for redistribution through inequality perceptions. The results in the last specification (column 4 of Table 6) uses our second variable of ideology that measures beliefs on social justice. The results are consistent with column 3 and show that demand for redistribution is larger for those individuals who consider that the need to support a family is essential to determine people's wages.

   Figure 6, panel a, plots the change in the probability of answering "agree" or "strongly agree" to government redistribution for a one standard deviation increase in perceptions of inequality by political ideology and Figure 6, panel b, plots these marginal effects by beliefs on social justice. These Figures show that for individuals on the far-left, who on average have a higher demand for redistribution, a one SD increase in perceptions of inequality has a comparatively small effect on the probability of agreeing or strongly agreeing to demand for redistribution. The change in the probability of agreeing is negative in 0.6 percentage points, but barely statistically different from zero, while the probability of strongly agreeing is
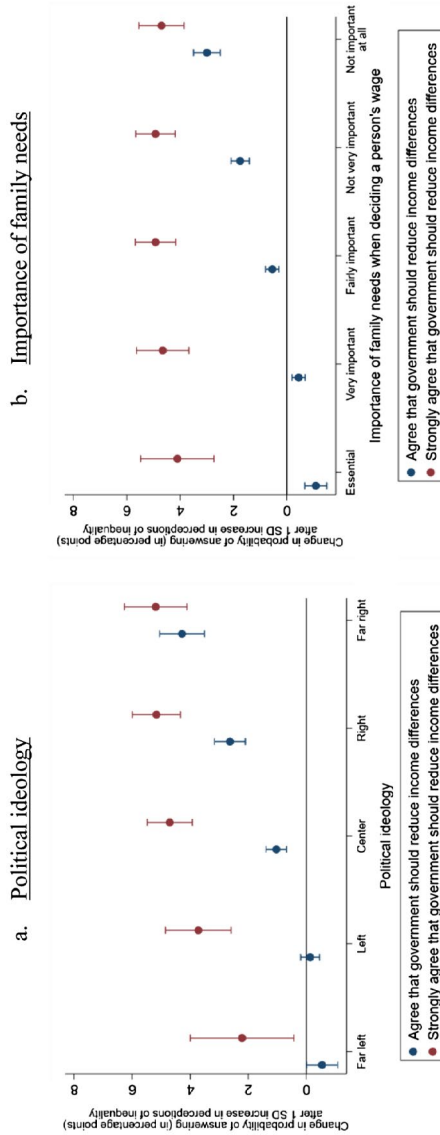
Figure 6. Marginal Effects of Perceptions of Inequality On Demand for Redistribution.

Notes: these Figures plot the marginal effect of an increase of one standard deviation in inequality perceptions (about 7.7 Gini equivalent points) on the probability of answering "agree" (blue) or 'strongly agree' (red) to the statement 'it is the responsibility of the government to reduce income differences between people with high incomes and those with low incomes'. In the left panel, the marginal effect is computed at each value of the political ideology variable and the specification used corresponds to column 3 of Table 6. In the right panel, the marginal effect is computed at each value of the variable on beliefs about the importance of family needs and the specification used corresponds to column 4 of Table 6. Marginal effects are estimated at the mean for all remaining variables. Lower and upper bounds correspond to the 95% confidence interval. [Colour figure can be viewed at wileyonlinelibrary.com]

positive in 2.2 percentage points. Overall, after one standard deviation increase in inequality perceptions those who agree or strongly agree to demand for redistribution add up to 78.6 percent—only a 1.6 percentage point increase. For those on the far-right, the baseline demand for redistribution is lower (45.3 percent agree or strongly agree on the role of government to redistribute), but this increases to 54.8 percent with a one standard deviation increase in perceptions of inequality. These percentages are 33.6 percent to 36.6 percent and 17.1 percent to 21.8 percent for those who have stronger or weaker views of social justice, respectively.

In short, individuals on the left have a strong demand for redistribution and the demand is fairly insensitive to the actual level of inequality they perceive, while individuals on the right vary substantially their demand for redistribution as their perceptions of inequality change.

The evidence presented in this Subsection suggests that contextual variables only have an influence on demand for redistribution through their impact on perceptions of inequality—there is no direct effect of the economic context on individual's demand for redistribution. In turn, ideology also shapes the relationship between perceptions of inequality and demand for redistribution, although for some individuals—those on the left of the political spectrum or those who believe that family needs should be important in determining an individual's wage—demand for redistribution is strong for all levels of perceived inequality. Instead, individuals on the right (or with less strong views on social justice) demand for redistribution changes significantly with their inequality perceptions.

6. Conclusions

In this paper we provide new insights on subjective perceptions of inequality and their relationship with demand for redistribution. First, we show how inequality perceptions have evolved during the last three decades, highlighting shifts in all countries, which are quite remarkable in some cases. For a few countries, up to a third of the population changed views about inequality. We also illustrate that shifts in perceptions are linked with changes in objective measures of inequality, but that the links are not strong and, in many cases, significant gaps between subjective and objective inequality arise.

Since opinions (and decisions) about what to do with respect to inequality are based on perceptions, it is key to understand why these gaps appear or, equivalently, understand how perceptions of inequality are formed. This is our second main contribution. We argue that some specific elements of the economic context in which individuals live—in addition to objective income inequality—shape their perceptions of inequality. We also emphasize that ideology could play an important mediating role in that process. There could be two channels of influence of ideology. In one case, depending on their beliefs, individuals may be more or less *sensitive* to different elements of the context surrounding them. In another case, individual may be *exposed* more to one element than another because they actively acquire information from specific and likely not fully impartial sources or media outlets.

In our empirical analysis, we identify unemployment, poverty, and government expenditures in education as elements of the economic context with a strong

correlation with perceptions of inequality. We find that, overall, unemployment and poverty have an effect on individual's perception of inequality like that of *objective* income inequality. Individual characteristics also matter for inequality perceptions, notably socio-economic characteristics determine the degree of exposure to a specific context: for example, depending on their socio-economic status, individuals might actually know more or less unemployed people. These correlations differ marginally across the political spectrum. When ideology is proxied by beliefs on social justice we find that objective inequality is slightly more relevant in influencing perceptions for those who consider family needs important, while poverty appears to be more relevant for those who consider family needs not important. This is in line with what one would expect as, while the correlations are weak, the former group tend to have left-leaning views and the latter right-leaning views.

Subjective perceptions about inequality, formed through the process just described, together with individuals' views about social justice (ideology)—or as Alesina and Giuliano (2011) put it, their views about a desired or optimal level of inequality—and with their self-interest motive determine individuals' opinions (and likely their requests, for example through voting) about whether the government should intervene and redistribute. A novel finding is the significant role that ideology or beliefs play. The results from our empirical analysis show that for left-leaning individuals, and for those believing that individuals should be rewarded according to their needs, demand for redistribution is strong almost irrespective of their perceptions of inequality. In other words, left-leaning individuals or those weighing social justice strongly vary their demand for redistribution marginally when their inequality perceptions shift. Instead, right-leaning individuals' demand for redistribution, which is on average much lower, adjusts substantially in line with changes of their inequality perceptions. All in all, the empirical evidence in this paper shows that the process by which variations in economic inequality lead to changes in demand for redistribution is influenced by the formation of perceptions and repeatedly mediated by individuals' ideology and beliefs. It is far from being a direct and monotonical process. Indeed, the notion behind standard economic models of a well-informed, ideologically unbiased, and solely driven by self-interest agent fails to capture the essence of this process.

While the paper does not develop a full model of the formation of perceptions, it moves towards this direction providing useful insights; and it offers a link between those perceptions and actual opinions on the redistribution process. Further research will be needed to understand the exact mechanisms by which individuals take elements of their context, process them and build a mental construct—a *perception*—of the inequality in the society they live in.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

Table A1: Inequality Perceptions, Benchmark Table Including Italy and Latvia

Table A2: Equality Perception, Benchmark Specification, Excluding Countries with One Year Only

Table A3: Inequality Perceptions (Cardinal Variable), Benchmark Table Using OLS