Crime and Equality, or Crime and Punishment? Population Heterogeneity and Fear of Crime as Determinants of Redistribution Preferences

Thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Science in Politics Research

at the

Department of Politics and International Relations
University of Oxford

Karl Kahn

Word Count: 14,729

August, 2014

Contents

List of Tables

List of Figures

1 Introduction

What is the relationship between inequality and redistribution? Despite its place at the heart of recent debates in comparative political economy, this remains a highly contested question. Whilst some contemporary studies have found support for the intuition, building on the early contributions by Romer (1975) and Meltzer and Richard (1981), that more inequality should be associated with more redistribution (Milanovic, 2000; Kenworthy and Pontusson, 2005), others have argued that once various theoretical and empirical caveats are considered, either there is no relationship at all, or that more inequality is in fact associated with less redistribution (Iversen and Soskice, 2006, 2009; Moene and Wallerstein, 2001, 2003; Shelton, 2007). It is not unfair to say, therefore, that notwithstanding considerable research efforts, our current understanding of how inequality affects redistribution remains incomplete. This state of the literature is unsatisfactory, not only from an academic point of view, but also from a substantive perspective: at a point in time where income inequality — and, following recent debates both within and outside of academia, if Piketty (2014), Alvaredo et al. (2013), and Atkinson, Piketty, and Saez (2009) are correct, even more so wealth inequality — has been on the rise in most advanced industrial democracies over the last few decades (OECD, 2011), a systematic and clear understanding of the relationship between inequality and redistribution seems all the more needed.

To begin at the beginning, if we want to understand how inequality matters for redistribution, then studying the relationship between inequality and demand for redistribution is a natural starting point. Yet, in spite of the recent (and welcome) surge in scholarly attention directed at the determinants of redistribution preferences, important questions remain unanswered, and central but basic theoretical assumptions disputed. Hence, whilst we do know for certain that patterns as well as levels of public support for redistribution show considerable variation between countries, and have good evidence to suggest that

this variation in turn matters for redistributive outcomes (Brooks and Manza, 2006a, 2006b; 2007; Kang and Powell, 2010; Svallfors, 1997, 2004), our current understanding of what explains this observation is more limited. Are redistribution preferences primarily a matter of material self-interest (Romer, 1975; Meltzer and Richard, 1985; Iversen and Soskice, 2001; Rehm, 2009), are other-regarding preferences more important (Shayo, 2009; Fehr and Schmidt, 2006, Lupu and Pontusson, 2011), or do both type of considerations matter (Dimick, Rueda, and Stegmueller, 2014; Rueda, 2014)? If macro-level inequality affects demand for redistribution, which causal mechanisms link it to the micro-level (Moene and Wallerstein, 2001, 2003; Rueda and Stegmueller, 2014)? And, not least, how do we explain the widely noted negative association between population heterogeneity and redistribution (Alesina and Glaeser, 2004; Luttmer, 2001; Gilens, 1996, 1999)?

Over the following pages, I develop a theory that seeks to address some of these questions, I delimit it from alternative arguments, and I show that my expectations receive preliminary support in an analysis of cross-national survey data from the Eurobarometer and the European Social Survey. My central argument is simple. I suggest that inequality can affect redistribution preferences through two distinct causal mechanisms: first, by altering the distribution of individuals who have a tax and transfer motive for supporting redistribution, and second, through an externalities mechanism, by which inequality produces negative externalities for which redistribution is a possible solution. Whereas the former mechanism is hardly new, the latter has, with the exception of Rueda and Stegmueller (2014), widely been overlooked by previous authors. Emphasizing the importance of this logic, I focus on fear of crime — as most visible externality of inequality — and argue that whilst fear of crime can indeed have a positive effect on demand for redistribution, this effect is contingent on the level of ethnic or racial heterogeneity in the population. Building on classic economic models of crime, as well as on criminological theories about the formation of attitudes towards alternative crime prevention strategies, I argue that this

is because fear of crime can give rise to two distinct responses in the realm of politically relevant preferences: either increased demand for redistribution, or increased demand for more policing and harsher punishments, and that the level of population heterogeneity matters because it affects how the choice between these two options is made.

When taken together, therefore, the main thrust of my argument is that whilst inequality does indeed matter for redistribution preferences, it matters more in certain social settings than in others. Although I expect the tax and transfer mechanism to apply similarly across countries with divergent levels of heterogeneity, meaning that inequality should have a positive effect on demand for redistribution, I theorize that the externality mechanism of fear of crime will play out differently when the population is homogenous compared to when it is more heterogeneous. In the former case, my argument implies that fear of crime will give rise to increased demand for redistribution, thus reinforcing the direct tax and transfer effect. In the latter case, by contrast, I argue that fear of crime will have no such effects on redistribution preferences, and theorize that it will instead be associated with increased demand for more policing and harsher punishments.

In arguing that (i) externalities of inequality are central to the relationship between inequality and redistribution, and (ii) that the association between fear of crime, as one such externality, and redistribution preferences is contingent on the level of population heterogeneity, the argument of this paper challenges some influential and well-known approaches to the formation of preferences for redistribution. This ranges from arguments that focus solely on short-term income maximization (Romer, 1975; Meltzer and Richard, 1981), to those emphasizing labour market risks and insurance (Iversen and Soskice, 2001; Estevez-Abe, Iversen, and Soskice, 2001; Swenson, 2002; Moene and Wallerstein, 2001, 2003; Cusack, Iversen, and Rehm, 2006; Rehm, Hacker, and Schlesinger, 2012), prospects of upward or downward social mobility (Alesina and Giuliano, 2009; Alesina and La Ferrera, 2005; Benabou and Ok, 2001; Piketty, 1995; Chec-

chi and Filippin, 2004), and even altruism (Shayo, 2009; Lupu and Pontusson, 2011; Rueda, 2014; Dimick, Rueda, and Stegmueller, 2014). In highlighting the role played by externalities of inequality, my argument implies that these various approaches have overlooked a key dimension of the inequality-redistribution nexus. With the exception of Rueda and Stegmueller (2014) — whose argument differs from that of this paper on a number of highly consequential points, as I discuss further below — this represents a novel but arguably fruitful avenue for research. Moreover, in emphasizing a causal mechanism through which the level of population heterogeneity conditions the effect of inequality on support for redistribution, my argument also offers a new model for understanding the widely debated relationship between ethnicity, race, and redistribution (Alesina and Glaeser, 2004; Luttmer, 2001; Shayo, 2009; Rueda, 2014; Lupu and Pontusson, 2011; Gilens, 1999). To my knowledge, I am the first to argue that racial and ethnic heterogeneity matter for redistribution preferences through this type of causal logic.

2 The Argument

The theoretical argument developed over the following pages makes four points about the formation of preferences for redistribution, emphasizing the relationships between fear of crime, population heterogeneity, and support for either redistribution or policing/punishments. I provide a summary of the argument here, and subsequently develop each point together with their relations to the existing literature over the pages that follow.

First, in line with most of the previous literature, I accept that tax and transfer considerations matter for redistribution preferences: that is, I expect individuals who are net beneficiaries of redistribution (in tax and transfer terms) to be more supportive of redistribution than individuals who do not have such a motive for supporting redistribution. This intuition, I take it, is not difficult to see. Moreover, provided that a key determinant of whether an individual stands to gain or lose from redistribution is his or her present income, I expect support for redistribution to decline as an individual's position in the income distribution increases, meaning that there is a negative relative income effect on redistribution preferences. All else equal, therefore, because increasing inequality generally means that more individuals would benefit from redistribution, this mechanism implies that inequality should be positively associated with aggregate demand for redistribution.

Second, and more importantly, I argue that this is not the only mechanism linking inequality to redistribution preferences: if macro-level inequality is associated with negative (or positive) externalities, it follows that individuals can come to support (oppose) redistribution in order to avoid (promote) such externalities from affecting their own utility (Rueda and Stegmueller, 2014; Alesina and Giuliano, 2009). Like Rueda and Stegmueller (2014), and drawing inspiration from classic economic models of crime (Becker, 1968; Ehrlich, 1973; Bourguignon, 2001), I focus on crime and fear of crime, as a highly visible consequence of inequality. Although alternative mechanisms are possible, including

negative externalities in education (Perotti, 1996; Galor and Zeira, 1993; Benabou, 1996), or (possibly) positive incentive and productivity effects of high inequality (Schumpeter, 1943; Welch, 1999; Partridge, 2005; Siebert, 1998; Bell and Freeman, 2001), these effects are more long-term, and less clearly linked to inequality compared to crime and fear of crime.

When taken together, these two points imply that inequality affects redistribution preferences through two separate causal mechanisms: (i) through a tax and transfer logic, effectively increasing the number of individuals who stand to benefit from redistribution, and (ii) by producing negative externalities, including fear of crime, for which redistribution is a possible solution. This theoretical framework forms the staring point for my main argument.

Third, I depart from the previous literature in arguing that in order to understand the association between fear of crime and demand for redistribution — and hence indirectly the relationship between inequality and redistribution preferences through the externalities mechanism — it is necessary recognize that redistribution is but one of several means through which fear of crime can be addressed. Again building on economic models of crime (Becker, 1968; Ehrlich, 1973; 1996; Freeman, 1982; Imrohoroglu et al., 2000), I argue that the most important alternatives to redistribution in this context are more policing or harsher punishments, both of which, like redistribution, are determined through politics. This means that in order to properly delineate the relationship between fear of crime and redistribution preferences, it is imperative to know how individuals come to prefer either option: that is, it is necessary to theorize about when and why fear of crime gives rise to increased demand for redistribution (and where, as a consequence, more inequality will be linked to more support for redistribution), and when it instead gives rise to increased demand for policing and punishment (and hence where the relationship between inequality and redistribution preferences will not follow). Without this piece of the puzzle, our understanding of this causal logic arguably remains incomplete.

Fourth, I suggest that a key determinant of this choice is the level of ethnic or racial heterogeneity in the population. High population heterogeneity matters, I argue, both because it makes the causal link between economic disadvantage and crime less clear, and because it introduces the possibility of prejudicial attitudes influencing views about the causes of crime, as well as the appropriate solutions for it. Since these points have important implications for the perceived efficiency of redistribution and policing/punishment as alternative means to deal with crime, it is reasonable to expect preferences for either option to be affected. Moreover, whilst the claim that heterogeneity affects views about crime along these lines is well established in the relevant criminology and political sociology literatures (Gilliam and Iyengar, 2000; Hurwitz and Peffley, 2005), this observation has yet to be incorporated into arguments about crime and fear of crime in the context of redistribution preferences, despite its importance. To that end, and building on this logic, I expect the strength of the association between fear of crime and support for redistribution to decline as the level of population heterogeneity increases, and in the other direction, the opposite to hold true for the relationship between fear of crime and support for policing and punishment.

Taken as a whole, this argument adds a new and important component to what has been said by previous authors, and leads to novel expectations about the relationship between inequality and redistribution preferences through the externality mechanism of fear of crime. Stated simply, the main thrust of my argument is that inequality will have different effects on redistribution preferences in different contexts: whilst fear of crime — and thus indirectly inequality — will have a positive effect on demand for redistribution as long as the level of population heterogeneity is low, I expect no such effects when the level of heterogeneity is high.

2.1 Short-term tax and transfer maximization

I follow an influential tradition in comparative political economy by assuming that redistribution preferences are grounded in material self-interest, and that present labour market income is an important component of such considerations. The most well-known and perhaps simplest statement of this approach is the model proposed by Romer (1975) and developed by Meltzer and Richard (1981). On the preferences side, in a simple world where there is no deadweight loss to taxation and where the labour supply is fixed, this model assumes that individuals have different productivities which determine their income, that utility depends only on income (measured in units of consumption, since there is no saving or investment), and that the government distributes an equal lump-sum transfer to all citizens financed through a linear income tax. Utility is thus given by some function,

$$U_i = f(c_i) \tag{1}$$

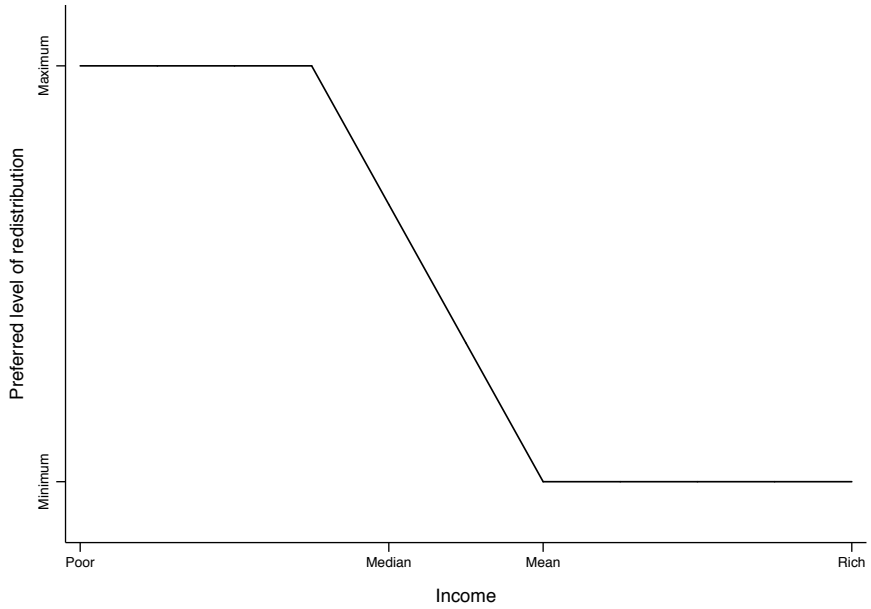
which is assumed to have the usual well-behaved properties. Following the notation of Alesina and Giuliano (2009), with individual productivity α_i, an income-tax rate of t, including the redistribution scheme described above in Eq.(1) gives

$$c_i = (1-t)\alpha_i + t\bar{\alpha} \tag{2}$$

$$U_i = f(c_i) = f((1-t)\alpha_i + t\bar{\alpha}) \tag{3}$$

where $\bar{\alpha}$ is the mean productivity, or equally, the mean income. It follows that the optimal choice of t depends on the distance between α_i and $\bar{\alpha}$: when α_i is smaller than $\bar{\alpha}$, the preferred tax-rate will be 1, and when α_i is smaller than $\bar{\alpha}$, the optimal tax rate will be 0. In other words, under the assumptions of the model, all individuals with an income below the mean will prefer the maximum tax rate with maximum redistribution, whilst all individuals with an income above the mean will prefer minimum taxation with minimum redistribution.

Figure 1: Preferences for redistribution in the RMR-model



In aggregating preferences and linking them to outputs, the Romer-Meltzer-Richard (hereafter, RMR) model assumes a straightforward median-voter logic, implying that the preference of the median-income individual determines government policy (Downs, 1957). Allowing for tax disincentives and relaxing the assumption of a fixed labour supply, meaning that voters below the mean may prefer an intermediate tax rate, this leads to the well-known expectation that more inequality should be associated with more redistribution. The micro-level implications of this are summarized in Figure 1 above.

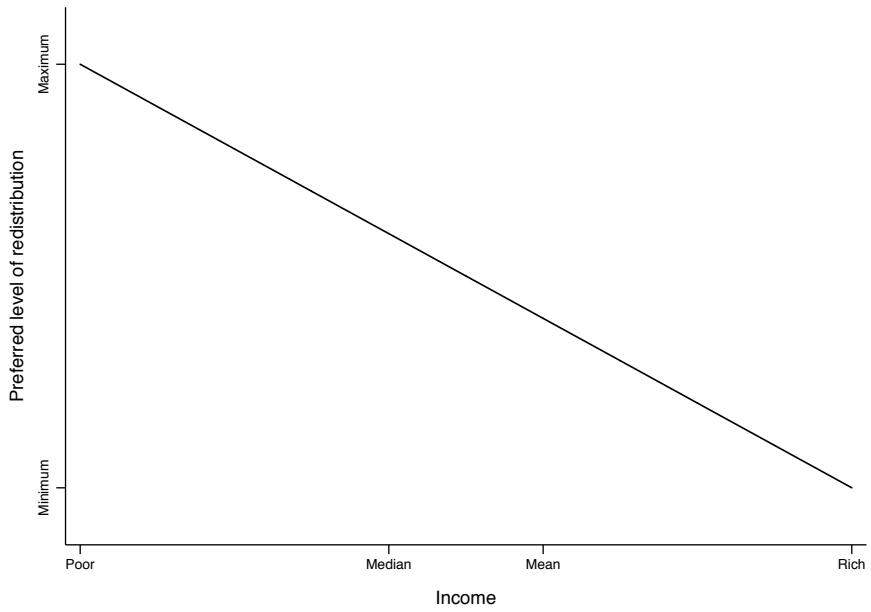
The general consensus in the macro-level literature, however, is that the RMR-model does not stand up to empirical scrutiny. Instead, whilst some have suggested that there might be no systematic relationship at all between inequality and redistribution, others have argued that the association is in fact negative, such that more inequality is associated with less rather than more redistribution (Iversen and Soskice, 2006, 2009; Moene and Wallerstein, 2001, 2003; Lindert,

2004; Lupu and Pontusson, 2011; Shelton, 2007; for competing arguments, see Milanovic, 2000; Kenworthy and Pontusson, 2005). To the degree that these arguments are concerned about preferences, moreover, they tend to rely on a logic where social policy fulfils not only a redistributive but also an insurance function, and hence emphasize the distribution of labour-market risks rather than the distribution of income (Iversen and Soskice, 2001; Estevez-Abe, Iversen, and Soskice, 2001; Gingrich and Ansell, 2012; Rehm, Hacker, and Schlesinger, 2012; Cusack, Iversen, and Rehm, 2006; Rehm, 2009, 2011).

It is important to remember, however, that the absence of macro-level support for the RMR-model does not imply that the same necessarily has to hold true for its micro-level implications. Failing to recognize this is to pass guilt by association. The electoral system (Iversen and Soskice, 2006), turnout effects (Boix, 2003; Mahler, 2008; Barnes, 2013; Bartels, 2009), party strategies (Rueda, 2005, 2007; Evans and Tilley, 2012), second-dimension issues (Scheve and Stasavage, 2006; Stegmueller, 2013a; Alesina and Glaeser, 2004; Inglehart and Flanagan, 1987), to name but a few, are all possible explanations for how the preferences side of the RMR-model can be correct even when its macro-level implications are not borne out. Empirically, moreover, whilst some studies using individual-level data have questioned the existence of a negative income effect on preferences (Kenworthy and McCall, 2008; Huber and Stanig, 2009), others have found the opposite (Finseraas, 2008; Shayo, 2009; Dimick, Rueda, and Stegmueller, 2014; McCarty, Poole, and Rosenthal, 2006).

In line with the findings of these latter arguments, I expect support for redistribution to decline with an individual's position in the income distribution. This is analogous to the implications of the special case of the RMR-model where the deadweight cost of taxation is allowed to affect preferences across the entire range of the income distribution, or equally, a model where the intensity of preferences for or against redistribution are theorized to increase with the relative income distance to the mean. Figure 2 illustrates this expectation graphically.

Figure 2: Expectation about income and redistribution preferences



2.2 Fear of crime and demand for redistribution

Although interesting in its own right, the effect of relative income on redistribution preferences is not my main concern in this paper: the association between fear of crime and demand for redistribution, and its relation to population heterogeneity. Notwithstanding the expectation that support for redistribution declines with relative income, there are good reasons for theorizing that tax and transfer considerations alone cannot account for all the observed variation in redistribution preferences, either cross-nationally or within countries. On the macro-level, again, it is simply not the case aggregate demand for redistribution is a straightforward function of inequality, and on the micro-level, as the empirical analysis of this paper's argument about relative income shows, support for redistribution often extends into income-groups who do not have a plausible tax and transfer motive for demanding redistributive policy (see also, amongst others, Rueda, 2014). To understand the formation of redistribution preferences, it is therefore necessary to look beyond income. In this section, I present the argument that fear of crime is positively related to demand for redistribution, before qualifying in the sections that follow.

To explain how inequality affects redistribution preferences beyond a mere tax and transfer logic, I follow a small set of previous arguments emphasizing how inequality can feature indirectly in utility functions when inequality is associated with negative externalities (Alesina and Giuliano, 2009):

$$U_i = f(c_i(\ldots, Q)) \tag{4}$$

$$\frac{\partial U_i}{\partial Q} < 0 \tag{5}$$

where Q is some measure of inequality. Arguments in this vein thus still ground redistribution preferences in material self-interest, but differ from the standard approach in theorizing that that self-interest is, amongst standard variables such as income and labour supply, a negative function of inequality.

The argument that inequality can affect utility independently of tax and transfer effects opens the door for new theories about the relationship between inequality and redistribution. On a general level: if inequality has a negative effect on utility through an externalities logic, it is reasonable to expect inequality to have a positive effect on preferences for redistribution, since redistribution then is a means for preventing such harmful effects of inequality from obtaining.

Different authors have stressed different mechanisms through which this kind of association might follow. In economics, an important set of arguments have emphasized how high-income individuals can come to support redistribution in order to realize the benefits of better access to higher education for the poor (Romer, 1990; Alesina and Giuliano, 2009; Perotti, 1996; Benabou, 1996). More closely related to my own argument, Rueda and Stegmueller (2014) have applied a similar logic to crime and fear of crime, and argued that if more inequality leads to more crime and hence more fear of crime, the rich will become more likely to support redistribution as inequality increases, given that redistribution then serves to increase their sense of safety. The argument of this paper differs from that of Rueda and Stegmueller (2014) on two key points. First, I do not assume that differences in investment horizons conditioned by income imply that fear of crime only matters for the rich, but rather expect it to matter for individuals across the range of the income distribution. Second, and more importantly, my argument suggests that fear of crime will have different effects on redistribution preferences in different contexts, whereas Rueda and Stegmueller (2014) make no such claims. These differences will become clearer below.

Theoretically, the claim that inequality matters for redistribution preferences through the externality mechanism of fear of crime is grounded in one of the central tenets of economic models of crime and deterrence: that the crime rate is positively related to the level of inequality. To recapitulate briefly, in the canonical version of this framework, developed by Becker (1968), potential criminals rationally evaluate whether to engage in crime. This means that an individual will commit a crime only if the expected payoff from doing so exceeds

its opportunity cost, most importantly the reward associated with legitimate work. A key determinant of these payoffs is level of income inequality. High inequality means that for the poor, the expected gain from crime is relatively high (assuming the benefit from crime is proportional to the wealth of society), whilst the relevant opportunity cost is low. Low inequality, on the other hand, mean that fewer individuals can expect to earn more from crime than from legal employment through the labour market. On the cost side of the crime calculus, moreover, for any level of inequality, the higher the probability of being caught and the larger the associated cost of punishment, the more discounted the expected payoff of crime will become. Taken together, therefore, the model suggests that crime will be a positive function of inequality, but a negative function of the probability of being caught and the severity of punishment.

Although the evidence is not completely unambiguous, a large empirical literature has found support for the hypothesis that inequality and crime are positively related. Fajnzlber, Lederman, and Loayza (2002), to take one of the most well cited examples, use panel data for 39 countries from the late 1960s to the mid-1990s to conclude that 'income inequality, as measured by the Gini index, has a significant and positive effect in the incidence of crime' (pp. 25). Ehrlich (1973), Freeman (1982, 1996), Kelley (2000), and Bourguignon (2001) also report similar results, amongst many others.

It is important to point out that whilst the discussion above concerns objective crime rates, it is fear of crime that does the heavy lifting in my argument. Whilst I accept that fear of crime and the probability of victimization are distinct, there are good reasons for expecting fear of crime to parallel actual crime in relation to inequality and policing/punishment in the context of this paper's argument. As Rueda and Stegmueller (2014) point out, the claim that fear of crime matters for redistribution preferences only requires that individuals concerned about crime are aware of actual crime rates, and that they perceive there to be a relationship between crime and inequality. Importantly, this argument holds even if the relationship between crime and fear of crime is imperfect.

To that end, accepting that inequality and fear of crime are positively related, the relationship between fear of crime and demand for redistribution is not difficult to see. On the logic outlined above, assuming that fear of crime negatively affects utility, it follows inequality will feature indirectly in individual utility functions. Because high inequality promotes fear of crime, high inequality has negative effect on utility. In the opposite direction, because equality promotes security, equality has a positive effect on utility. Formally, this can be written as,

$$U_i = f(c_i(\ldots, C_i)) \tag{6}$$

$$\frac{\partial U_i}{\partial C_i} < 0 \tag{7}$$

$$C_i = f(\ldots, Q_j) \tag{8}$$

$$\frac{\partial C_i}{\partial Q_j} > 0 \tag{9}$$

where C_i is a measure of fear of crime, and Q_j is a measure inequality in country or region j. Fear of crime can thus give rise to increased support for redistribution out of purely self-interested reasons. That is, because redistribution lowers inequality, it follows that increased support for redistributive polices can become a rational response to increased concern about crime caused by high inequality. On this logic, therefore, fear of crime should be positively associated with demand for redistribution.

2.3 Redistribution, or policing, or punishment?

The above argument about fear of crime and redistribution preferences forms the foundation for the main theoretical point of this paper. I depart from the previous literature, however, in relaxing the assumption (whether implicit or explicit) that individuals concerned about crime will always come to support more redistribution, whether in conjunction with or instead of more policing or harsher punishments. As I discuss below, this leads to very different predictions about the relationship between inequality, crime, and support for redistribution.

That crime is not only the product of inequality but also a function of the probability of being caught and the cost of punishment is a central feature of standard economic models of crime, as discussed above. On the theory side, whereas inequality matters because it affects the relative payoffs associated with committing a crime versus engaging in some form of legitimate work, the probability of being caught and the severity of punishments enter the equation through the cost side, effectively lowering the expected benefit tied to crime. This means that the more likely criminals are to be captured, and the larger the associated cost of being convicted, the smaller the group of individuals who have a rational reason for engaging in crime will become.

As for the proposition that more inequality leads to more crime, empirical support for the argument that policing (as the probability of being caught) and the severity of punishments (as the cost associated with being caught) have a negative effect on crime is also abundant. Most empirical research focuses on the United States, not least because of difficulties with deriving cross-national datasets able to overcome possible endogeneity issues. Marvel and Moody (1996), to take one influential example, conduct a Granger causality analysis using data for 49 states and 56 cities from a period of more than 20 years, to conclude that 'higher police levels reduce most types of crime, particularly at the city level', and that 'the size of the impact is often substantial' (pp. 640). Likewise, using an innovative empirical strategy that exploits electoral cycle effects in levels of police hiring in 59 U.S. cities between 1970 and 1992, Levitt

(1997, 2002) finds robust evidence for the argument that policing is negatively related to local crime rates. These studies deal with policing, but similar evidence is also available for the effect on crime of different punishment measures, whether in the form of fines or imprisonment (Levitt, 1996; Shepherd, 2002; for a review, see Levitt and Miles, 2007).

Going back to the main concern of this paper, these findings call into question the assumption that increased support for redistribution is the only possible response concern about crime amongst voters. Rather, the fact that crime and by implication fear of crime can be seen as the product of both inequality, on one side of the equation, as well as policing and punishments, on the other, suggest that there is a sound theoretical basis for recognizing that concern about crime can give rise to two distinct responses in the realm of politically relevant preferences: either increased support for redistribution, or increased support for more policing and harsher punishments. Although fear of crime can, of course, be thought to affect preferences for both types of policies, it is important to emphasize that there is no given reason for assuming that this will always be the case, or more reasonably, that the preferred balance between the two will be constant. As the empirical literature stands, however, we simply do not know when citizens react to concern about crime by supporting more redistribution, and when they do so by supporting more policing and harsher punishments. In the following section, I develop a model that seeks to explain this choice.

2.4 Ethnic and racial heterogeneity

The point emphasized above begs the question of how this choice is determined: when does fear of crime give rise to increased demand for redistribution, and when does it give rise to increased support for more policing and harsher punishments? As I have said above, I argue that a key factor influencing this choice is the level of ethnic or racial heterogeneity in the population. My suggested causal mechanism works through perceptions about the relative efficiency and cost of redistribution and policing/punishment as alternative means to deal with crime. The more homogenous the population is, the more I expect redistribution to be seen as the preferred solution to crime, and hence the stronger I expect the positive association between fear of crime and support for redistribution to become. In contexts of high heterogeneity, by contrast, I theorize that more policing and harsher punishments will be seen as more efficient than redistribution, implying that the association between fear of crime and redistribution preferences will be weaker. I develop this argument in the paragraphs that follow.

First, to see why perceptions of the efficiency of redistribution and policing/punishment are important, recall that in the model discussed above fear of crime has an effect on redistribution preferences only because (i) fear of crime negatively affects utility, and (ii) redistribution is a means to reduce fear of crime. Hence, preferences for alternative crime prevention measures are indirect: neither redistribution nor more policing or harsher punishments feature directly in individual utility functions, and demand for either option arises only because of their expected (negative) effect on fear of crime. This means that individuals do not intrinsically prefer either redistribution or policing/punishment, but rather that their demand for either alternative (or the balance between the two) depends only on their relative efficiency, given some cost, at increasing perceptions of safety. To understand how the trade-off between redistribution and policing/punishment is made, therefore, it is necessary to know how beliefs about the efficiency of either option are formed.

Of course, in a wholly rational world with perfect information such beliefs would have no place in my argument, since all that mattered then mattered would be the actual ability of redistribution and policing/punishment to produce safety. In the real world, however, things are less clear. As Rueda and Stegmueller (2014, pp. 11) emphasize, 'a number of issues makes the comparative costs and benefits of these policies difficult to quantify', both on the societal and on the individual level. Aside from the in itself less than straightforward issue of discerning the relative marginal productivity of either policy option on crime and fear of crime, this task also includes estimating their more long-run and indirect relative costs and benefits, a matter which has proven complex even for academic researchers attempting to do so (Vining and Weimer, 2010; Roman and Visher, 2009; Western, 2002).

A more reasonable expectation, therefore, is to theorize that what matters for the choice between redistribution and policing punishment is their perceived efficiency at reducing crime, which may or may not be accurate ex post facto. This means that in order to understand how this choice is made, it is necessary to understand the formation of such perceptions.

I argue that a key factor shaping this trade-off is the level of racial or ethnic heterogeneity in the population. The more homogenous the population is, the more efficient I expect redistribution to be perceived relative to its punitive alternatives; conversely, I expect high levels of population heterogeneity be associated with an increased preference for policing and punishment. There are several reasons for expecting ethnicity, race, and crime to be linked along the lines of this logic: one is that heterogeneity makes the causal link between inequality and crime less easy to identify, in the sense that it introduces the possibility that individuals come to perceive heterogeneity as the root cause of crime rather than economic disadvantage, another is that prejudice towards members of a different group from one's own influences how redistribution and policing/punishment as alternative solutions to crime come to be viewed. A large and predominantly US-centred literature in criminology and political soci-

ology has produced firm evidence in support of these expectations. Gilliam and Iyengar (2000), to take one example, use an experimental setting to manipulate the racial identity of an alleged perpetrator of murder in a stylized news report, and find that when the shown suspect is African-American, Whites become significantly more likely both to attribute the cause of crime to dispositional factors (for instance, the belief that 'some people are just born criminals') rather than to inequality, and to support harsher punitive policies. Similarly, Hurwitz and Peffley (2005) show in a survey experiment that white respondents primed on the identity of suspects as blacks were significantly more likely to prefer building more prisons over extending antipoverty programs, and on the observational side, Unnever, Cullen, and Jones (2008) derive evidence from the 2000 American National Election Survey to corroborate the finding that racial attitudes significantly condition beliefs about the causes of crime as well as the choice of crime prevention measures. Peffley, Hurwitz, and Sniderman (1997), Hurwitz and Peffley (1997), Unnever and Cullen (2010), and Peffley and Hurwitz (2002) also report similar results, amongst many others (for a review, see Huddy and Feldman, 2009). In short, the argument that heterogeneity matters for views about crime and punishment cannot be ignored.

These findings cast serious doubt on the assumption that fear of crime is necessarily linked to increased support for redistribution, and that this effect is invariant across social contexts. Instead, they point to the need of theorizing that fear of crime, and by extension inequality, will have different effects on redistribution preferences in different places. Incorporating this into the argument of this paper, I expect that when the level of heterogeneity is low, fear of crime will indeed be associated with increased support for redistribution. As the level of heterogeneity increases, however, things will change: redistribution will gradually come to be seen as a less efficient solution to crime, whilst the opposite will hold true for policing and punishment. When heterogeneity is high, therefore, I expect that whilst fear of crime will have a positive effect on support for punitive measures, it will have no such effect on demand for redistribution.

2.5 Hypotheses

Taken together, the above generates the following five testable hypotheses about the effects of relative income, fear of crime, and population heterogeneity on preferences for redistribution and law enforcement.

Hypothesis 1: As an individual's income increases relative to the mean, support for redistribution will decrease.

Hypothesis 2: When the level of population heterogeneity is low, fear of crime will have a positive effect on support for redistribution.

Hypothesis 3: As the level of population heterogeneity increases, the positive effect of fear of crime on support for redistribution will weaken.

Hypothesis 4: When the level of population heterogeneity is high, fear of crime will a positive effect on demand for more policing and harsher punishments.

Hypothesis 5: As the level of population heterogeneity declines, the positive effect of fear of crime on demand for more policing and harsher punishments will weaken.

3 Empirical Strategy

To test the above expectations, my main task is to delineate how the effect of fear of crime on (i) redistribution preferences and (ii) preferences for policing/punishment varies with the level of population heterogeneity. My key expectation is that the (positive) effect of fear of crime on support for redistribution will decline in magnitude as the level of population heterogeneity increases (Hypothesis 2 and 3), whilst the opposite holds true for the association between fear of crime and demand for policing and punishment (Hypothesis 4 and 5). Moreover, because my theoretical argument implies that redistribution preferences will be affected by short-term tax and transfer motivations in addition to externality related concerns, I also expect that relative income is negatively associated to support for redistribution, all else equal (Hypothesis 1).

The structure of the argument means that I am interested in a cross-level interaction effect: that is, in how population heterogeneity, as country-level variable, affects the relationship between fear of crime and preferences for redistribution and policing/punishment on the individual-level. I explore these relationships using individual-level survey data from the 2002 Eurobarometer 58.0 and the 2010 European Social Survey, which to my knowledge are the only two cross-national datasets that contain the full range of items necessary to test my theoretical logic. Importantly, the list of requirements includes a high-quality measure of income, as well as reliable items tapping into all of fear of crime, support for redistribution, and attitudes towards law enforcement. To that end, whilst finding surveys that measure either one is not particularly difficult, the supply of data that includes all of the above is considerably more limited. Statistically, I use a 'two-step' strategy. I elaborate on this method below, but to summarize its main features: in the first step, I run separate individual-level regressions in each country for which I have data, and in the second step, I regress the estimated coefficients from the first-step country-specific regressions on the set of macro-level variables, including population heterogeneity.

At the onset, I want to emphasize that the analysis below should be seen as a preliminary test of my theoretical argument, rather than as a conclusive exploration of its empirical implications. Most importantly, the limited availability of cross-national survey data that meet the necessary requirements mean that no firm conclusions can (or should) be drawn from the analysis. Moreover, whilst additional experimental data would have been highly useful for testing the validity of my theorized causal mechanism linking population heterogeneity to perceptions about the efficiency of redistribution and policing/punishment as solutions to fear of crime, the temporal, practical, and (not to say) financial constrains on this project have limited my ability to generate such data. To that end, whilst the analysis below is valuable as a first test of my argument, more remains to be done, not least by me as part of coming DPhil work.

The empirical part of this paper is organized as follows. In the remainder of this section, I discuss the scope of my argument and empirical analysis, describe my two-step statistical methodology, and finally deal with the selection and operationalization of macro-level variables. I then present the results based on each of the two individual-level datasets in turn: first considering the 2002 Eurobarometer 58.0, and secondly the 2010 European Social Survey.

3.1 Scope of the argument

In line with most of the previous literature on redistribution preferences, I limit the scope of my argument and empirical analysis to the set of advanced industrial democracies. There are theoretical as well as empirical considerations justifying this choice. First, and perhaps most importantly, it is simply not clear that the same causal mechanisms behind redistribution preferences work in developed and developing contexts, implying that generalizing explanations between the two is inherently difficult. Second, it is also the case that the availability of data required to test my theoretical argument is highly limited outside of the developed world, a problem that is further compounded by potential issues of item incomparability between developed and developing contexts (King,

Murray, Salomon, and Tandon, 2003). As such, whilst further efforts aimed at explaining redistribution preferences outside of advanced industrial settings would be welcome, I nevertheless take it that limiting the scope of the argument in this manner is justified.

3.2 Statistical methodology

As is relatively well known, the hierarchical structure of my argument and empirical analysis — with variables on the country-level affecting the relationship between other variables on the individual-level — raises a number of important but sometimes thorny methodological issues. Most importantly, not accounting for the multilevel structure of the data would produce underestimated standard errors, given that the individual-level observations are not independent.

Generally speaking, there are two main approaches in the contemporary statistics and econometrics literatures to dealing with the type of argument and data used in this paper, both of which have been applied extensively in both political science and economics. One alternative is to estimate random effects multilevel models by maximum likelihood. Another is to estimate pooled models with robust standard errors to account for clustering in the data.

Whilst both of these approaches have their merits, there is a worry that neither performs well under conditions where the number of macro-level units is small, but the number of observations within each macro-unit is sufficiently large to be consistently estimated separately. As Huber, Kernell, and Leoni (2005) point out, the approach to inference in maximum likelihood random effects models as well as most common cluster correction techniques is asymptotic, and derived under the assumption that the number of macro-units tends to infinity. This assumption is not necessarily reasonable, however, when the number of macro-units is small, as it is here. Moreover, the literature gives no clear guidance as to what macro-level sample size is 'good enough'. Maas and Hox (2004), for instance, show that common random intercept maximum likelihood models typically underestimate standard errors when the number of macro-units

is less than 50, whilst Stegmueller (2013b) argues that as few as 20 units can be sufficient when the main interest lies in a cross-level interaction. Other authors have other recommendations (Kreft and de Leeuw, 1998; Rabe-Hesketh and Skrondal, 2008). Murray, Varnell, and Blitstein (2004) also reach similar small-sample conclusions with respect to cluster corrected standard errors, and warn against using such an approach when the number of macro-units is less than 40. Moreover, as Huber, Kernell, and Leoni (2005, pp. 377) comments, although a variety of small-sample correction methods for either approach are available (Fay and Graubard, 2001; Murray, Varnell, and Blitstein, 2004), 'there is little consensus about which one to choose, and none is available in any of the widely available statistical packages'.

To avoid these concerns, I adopt a two-step analytic strategy (Huber, Kernell, and Leoni, 2005; Jusko and Shively, 2005; Lewis and Linzer, 2005; Leoni, 2008). As the term suggests, this involves estimating separate regression models in two distinct steps. In the first, I run two logit models in each country for which I have data: one for redistribution and one for policing, as functions of solely individual-level characteristics. For each country $j \in \{C_1, C_2, C_3, \ldots, C_j\}$ and individual $i \in j$, I thus estimate:

$$R^*_{ij} = \beta^j_{income}(y_i - \bar{y}_j) + \beta^j_{crime} CRIME_i + \mathbf{W_{ij}}\mathbf{b_j} + \varepsilon_{ij} \tag{10}$$

$$P^*_{ij} = \delta^j_{income}(y_i - \bar{y}_j) + \delta^j_{crime} CRIME_i + \mathbf{W_{ij}}\mathbf{d_j} + \varepsilon_{ij} \tag{11}$$

where R^*_{ij} and P^*_{ij} are latent variables (technically, the natural logarithm of the odds of a positive outcome on the dependent variable) measuring support for redistribution and law enforcement, and β^j_{income} and δ^j_{income} the effect of relative income $(y_i - \bar{y})$, where y_i is individual income and $\bar{y}_j$ the country-mean income, on such preferences. In turn, the externality-related effect of fear of crime, $CRIME_i$, is captured by β^j_{crime} and δ^j_{crime} respectively. $\mathbf{W_{ij}}$ is a matrix of individual-level controls and $\mathbf{b_j}$ and $\mathbf{d_j}$ their respective coefficients. In terms of my argument, the short-term tax and transfer effect of inequality

on redistribution preferences is thus picked up by β^j_{income}, and the remaining externality related effect, through the micro-logic of fear of crime, is captured by β^j_{crime}. Given that the number of observations i in each country j is relatively large, moreover, it follows that each of the β^j's and the δ^j's can be assumed to be consistent. The first step thus leaves me with two sets of estimated country-specific coefficients $\hat{\beta}^j_{crime}$ and $\hat{\delta}^j_{crime}$, together with their associated errors, giving the effect of fear of crime on preferences in each country.

The objective of the second step is to estimate the association between these country-specific coefficients of fear of crime and the country-level variables, including population heterogeneity. This implies estimating the equation:

$$\beta^j_{crime} = \gamma_1 + \gamma_2 HETERO_j + \mathbf{Q_j b} + u_j \tag{12}$$

However, given that the first-stage coefficients are estimates and hence come with a stochastic component, it follows that Eq.(12) can be written as:

$$\hat{\beta}^j_{crime} = \beta^j_{crime} + v_j \tag{13}$$

$$\hat{\beta}^j_{crime} = \gamma_1 + \gamma_2 HETERO_j + \mathbf{Q_j b} + u_j + v_j \tag{14}$$

To account for this uncertainty about $\hat{\beta}^j_{crime}$ in estimating Eq.(14), I use the technique developed by Lewis and Linzer (2005), Huber, Kernell, and Leoni (2005), and Leoni (2008), using the `edvreg` (version 6.0) routine for Stata. In very simple terms, this estimates the second-step regressions by FGLS, and employs the weighting scheme suggested by Borjas and Sueyoshi (1994) to account for the two components of the second-stage error term — the first being the errors carried forwards from the first-stage, and the second being the residual variance in the second-stage — effectively weighting the estimated coefficients from the first step regressions by their precision (for useful technical discussions, see Huber, Kernell, and Leoni, 2005; and Leoni, 2008). In their original article, Borjas and Sueyoshi (1994) provide evidence from a series of Monte Carlo sim-

ulations showing that the weighting strategy has good small sample properties, and gives results that superior to those from standard multilevel specifications when the number of observations in each macro-unit is sufficiently large to produce reliable estimates in the first step. This technique has also been employed in a number of recent publications in political economy, including Gingrich and Ansell (2012) and Gingrich (2014).

3.3 Macro-level variables

Population heterogeneity

To operationalize population heterogeneity, I use the ethnic fractionalization index developed by Fearon (2003). Like alternative fractionalization measures (e.g. Alesina et al., 2003), this index is defined as the probability that two individuals randomly drawn from the population will not come from the same ethnic group. Formally the fractionalization score for a country j can therefore be derived as

$$\text{FRAC}_j = 1 - \sum_{i=1}^{n} p_i^2 \tag{15}$$

where p is the proportion of citizens of country j belonging to group i, and n is the total number of ethnic groups that together make up the population of j. This means that high scores represent high population heterogeneity, and that low scores represent low population heterogeneity. To simplify interpretation, I transform the scale of the index to range from 0 to 10. Table 1 below reports the scores assigned to the countries included in my analysis.

The Fearon-index comes with a number of benefits relative to other fractionalization indices, the most well known alternative being that of Alesina et al. (2003). An important difference between the two datasets is the classification of ethnic groups: whereas the Alesina et al. (2003) index builds directly on the categorization of ethnic groups as given by the Encyclopaedia Britannica, the Fearon-index is designed to accommodate the fact that some ethnic divisions are more salient than others. As Fearon (2003, pp. 198) himself comments, 'im-

plicit in the idea of an ethnic group is the idea that member and non-members recognize the distinction and anticipate that significant actions are or could be conditioned on it', implying that to capture the relevant level of heterogeneity in a country it is 'natural and perhaps necessary that the right list of ethnic groups for a country depend on what people in the country identify as the most socially relevant ethnic groupings'. Accommodating this idea, the list of ethnic divisions underlying the index used here is developed to correspond to the groupings that people in a given country would point out as the relevant ethnic divisions, were they to be surveyed. Whilst this approach, of course, comes with the downside of having required a judgement call to be made about which groups that are relevant and which that are not, it also comes with the (arguably outweighing) benefit of allowing for a closer match between theory and empirics.

Macro-level controls

In addition to the population heterogeneity, I also include the following country-level controls in the second-step regressions: PPP-adjusted GDP per capita in units of 10,000 US dollars, the harmonized unemployment rate (both from the OECD Statistical Database), total net public social expenditure in percent of GDP (from the OECD SOCX Database), and federalism (dummy for being federal). Given the small sample size on the macro-level, I deliberately keep the second-step models parsimonious.

Table 1: Ethnic fractionalization by country

Country	Fractionalization score
Switzerland	5.75
Belgium	5.67
Israel	5.62
Spain	5.02
United Kingdom	3.24
Czech Republic	3.22
France	2.72
Slovenia	2.31
Sweden	1.89
Hungary	1.86
Ireland	1.71
Finland	1.32
Denmark	1.28
Austria	1.26
Norway	0.98
Germany	0.95
Netherlands	0.77
Greece	0.59
Poland	0.47
Portugal	0.40
Italy	0.40

Source: Fearon (2003).
Scale transformed to range from 0 to 10.

4 Analysis: Eurobarometer

I begin by examining the Eurobarometer 58.0. Like other Eurobarometer surveys, this dataset is constructed from data collected though country-administered phone interviews, in this case conducted in September and October 2002. In total, 17,401 individuals were interviewed. Accounting for missing data by listwise deletion, however, the effective number of observations used in the analysis below falls to about 10,500, from the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom. Descriptive statistics for all individual-level variables are provided in Table 2 below.

4.1 Variables

Dependent variable: Redistribution preferences

To operationalize redistribution preferences, I use a straightforward item asking respondents whether they 'tend to agree' or 'tend to disagree' with the statement that 'the government should redistribute income from the better-off to the less well off'. Although the wording of this item differs somewhat from those used in the ESS and the International Social Survey Programme, I take it that there is little doubt that the measurement validity if this item is high (Adcock and Collier, 2001). I code 'tend to agree' responses as 1, 'tend to disagree' responses as 0, and all forms of 'don't know' and other non-responses as missing.

Dependent variable: Policing attitudes

The Eurobarometer includes an item that prompts respondents with the statement 'better policing would reduce crime in my area', with answers again classified as 'tend to agree' or 'tend to disagree'. As with the redistribution item, I code 'tend to agree' responses as 1, and 'tend to disagree' responses 0.

Various points can be made for and against the usefulness of this item in relation to my theoretical argument. In particular, a potential problem follows from the fact that the item asks whether respondents believe that better more

policing would lead to less crime, as opposed to whether they would prefer to have better policing, simpliciter. There are good grounds, however, for arguing that this is not a major cause for concern. On my theoretical argument, population heterogeneity matters precisely because it affects the perceived efficiency of policing/punishment and redistribution as alternative means to deal with crime, the former of which is arguably very close to what this item taps into. Admittedly, a remaining problem is the resulting asymmetry between this item and that measuring support for redistribution: whilst the policing question directly concerns evaluations of the effectiveness of policing as a means to deal with crime, the redistribution question taps into generic support for redistribution from the rich to the poor, without any explicit mention of its relation to crime. Nevertheless, given the scarcity of alternative and useful survey data on this very issue, I take it that this item will be sufficient for the current purposes.

Fear of crime

To capture fear of crime, I follow the bulk of the relevant criminology literature, as well as Rueda and Stegmueller (2014), in employing an item that asks respondents how safe they would feel walking alone through a dark local area at night, with responses on a four-point ordinal scale from 'very safe' to 'very unsafe'. Whilst widely used, a possible criticism of this item is that it taps fear of violent crime, as opposed to fear of property crime. This leads to two potential problems with respect to my theoretical argument: first, that property crime and violent crime may have different associations to inequality, and second, that fear of violent crime has little to do with material self-interest.

I argue that neither of these two points are necessarily problematic. First, to the extent that inequality only affected property crime but had no relationship to violent crime, the ambiguity in the type of crime tapped into by this item would indeed be a problem, since it would then follow that fear of violent crime should have no direct relevance for redistribution preferences. Existing research indicates that this is not the case, however. Empirically, numerous studies have

found support for the proposition that inequality is positively associated not only to property crime but also to violent crime, implying that a concern about either — or, for that matter, both — types of crime should have similar effects on redistribution preferences (Fajnzlber, Lederman, and Loayza, 2002; Kelly, 2000; Ehrlich, 1973; Freeman, 1982; for a theoretical account, see Bourguignon, 2001). Second, in response to the claim that fear of violent crime has little to do with material self-interest, there is a good argument to be made for theorizing that violent crime, like property crime, has a negative effect on material self-interest to the extent that being the victim of violent crime has negative economic consequences. The clearest instance of this is the intuition that victimization is associated with a loss of expected income, a proposition for which there is ample empirical evidence (Macmillan, 2000, 2001). On this logic, it again follows that fear of violent crime and fear of property crime can be seen as equivalents in the context of my theoretical argument, and hence that the possible ambiguity in the item remains inconsequential (for general discussions of this item, see Ferraro and LaGrange, 1987; Hale, 1996).

Relative income

On my argument, income matters because it determines how much a given individual has to gain or lose from redistribution in tax and transfer terms. This implies that I am more interested in an individual's position in the income distribution than in his or her absolute income. To incorporate this into my empirical analysis, I follow Rueda and Stegmueller (2014), Rueda (2014), and Idema and Rueda (2011) in developing an income measure that captures the relative distance between respondents' income and the country-mean income.

In the Eurobarometer 58.0, pre-tax and transfer income is recorded in ten country-specific income bands roughly corresponding to the deciles of each country's income distribution. To construct the relative income variable, I first transform each band to its midpoint, and calculate a 'midpoint' for the open-ended top category using the formula developed by Hout (2004). I subsequently cen-

Table 2: Descriptive statistics

Eurobarometer 58.0 (2002)			
Substantive variables	Description	μ or %	σ
Redistribution preferences	1 = Supports redistribution 0 = Does not support redistribution	71.7%	–
Policing preferences	1 = More policing would reduce crime 0 = More policing would not reduce crime	78.5%	–
Fear of crime	1 = Feel unsafe/very unsafe 0 = Feel safe/very safe	29.6%	–
Relative income	In 10,000s 2002 PPP-adjusted USD (See main text for details)	0	3.284
Controls	**Description**		
Age	Respondent's age in years	44.9	18.1
Female	1 = Female 0 = Male	53.0%	–
Education	Age when finished full-time education	18.01	4.5
Unemployment	1 = Unemployed 0 = Not unemployed	5.4%	–
Labour market status	1 = Participates in the labour market 0 = Out of the labour market	49.9%	–

tre all country-specific income variables on their means. Given that variation in price levels imply that the substantive meaning of having an income of some set amount below or above the mean will vary between countries, I also convert all figures to units of 10,000 2002 PPP-adjusted US dollars (using conversation rates from the OECD). This means, in simple terms, that respondents with identical scores on the relative income variable will be similar in terms of their purchasing power relative to that of someone with the mean income, even if they have different incomes in nominal terms. Finally, I merge all country-specific variables into a single cross-national relative income variable.

Individual-level controls

In addition to the above, I also control for a standard range of individual-level variables: age (respondents age in years), gender (dummy for being female), education (age at which the respondent completed full time education), unemployment (dummy for being unemployed), and labour market status (dummy for being in the labour force).

4.2 Descriptive patterns

It is useful to begin by considering some initial descriptive patterns that emerge from the data. Figure 3, first, shows the share of respondents in each country that support redistribution. As is evident from the figure, whilst support for redistribution is remarkably widespread in Europe, with an aggregate mean of 71.7% of respondents supporting redistribution, it is equally clear that this figure masks a great deal of between-country variation. The argument of this paper offers a possible explanation for why this is the case.

Whilst informative as an initial characterization of the support base for redistribution, Figure 3 does not say much about two points that are central to my theoretical logic: the existence of a negative relative income effect on redistribution preferences, and the relationship between fear of crime and support for redistribution. To illustrate the first of these points, Figure 4 shows the average level of support for redistribution amongst the poor (with an income

Figure 3: Mean support for redistribution by country

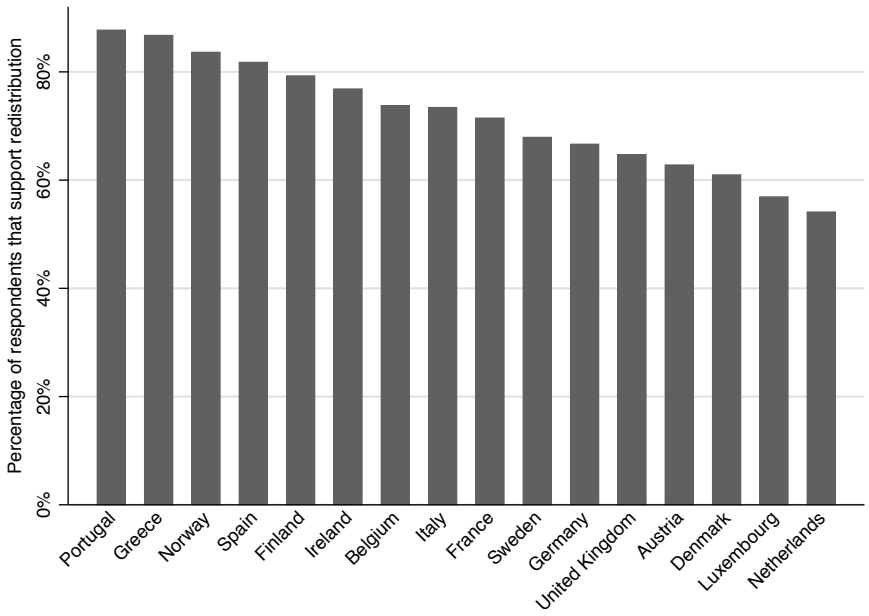
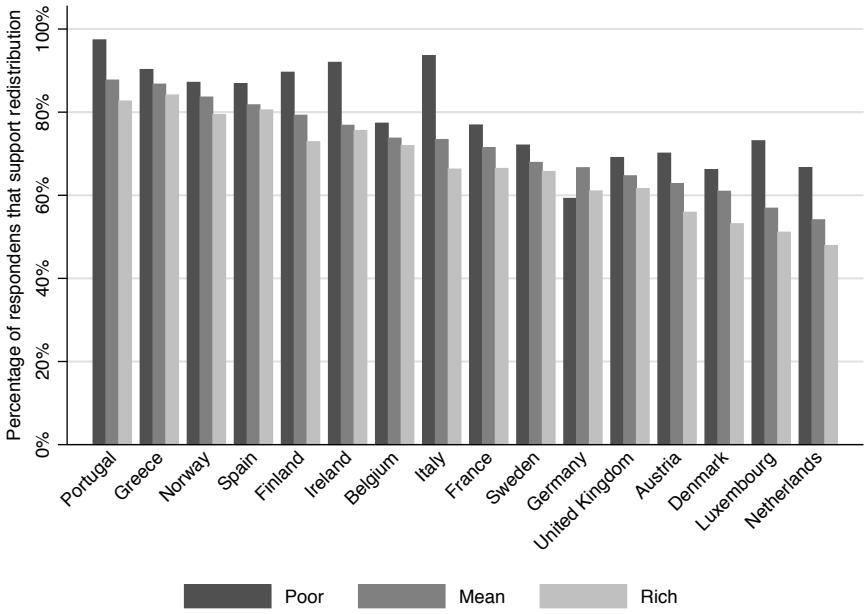


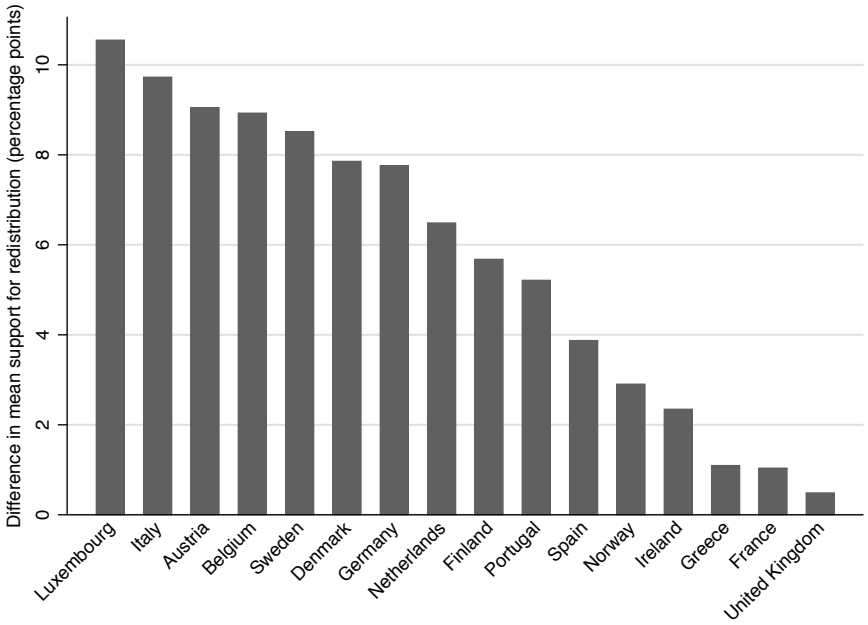
Figure 4: Mean support for redistribution amongst the rich and the poor



at or below the 10th percentile in the country) and the rich (90th percentile and above) for each country included in the sample. On a descriptive level, the data presented in Figure 4 lends considerable support for the argument that support for redistribution declines as you move up the income distribution: the poor are more supportive of redistribution than the rich in all countries aside from Germany, and the average difference between the two groups is just above ten percentage points. Again, however, there is considerable variation between countries, with the difference in support for redistribution between the poor and the rich ranging from 27.3 percentage points in Italy to 5.4 in Belgium.

Moving on from relative income, I have argued that whilst fear of crime can indeed give rise to increased support for redistribution, this effect will vary between countries. In the main part of the more systematic empirical analysis below, it is indeed this variation that I am first and foremost interested in explaining. To provide an initial illustration of this point, Figure 5 plots the difference (in percentage points) between the share of respondents who *are*

Figure 5: Fear of crime and support for redistribution



concerned about crime and that supports redistribution, and the share of respondents who *are not* concerned about crime that supports redistribution. Two points should be noted about the data presented in Figure 5. First, for all countries in the sample, support for redistribution is higher amongst those who are concerned about crime than amongst those who are not concerned about crime. Prima facie, this lends support to the theoretical argument that fear of crime can be modelled as an externality of inequality, and that redistribution can seen as a possible solution for it. Second, and perhaps more importantly, Figure 5 also makes it exceedingly clear that the association between crime and redistribution preferences is all but constant across countries. In Luxembourg, to take one example, the difference between the two groups is about 10.5 percentage points; in the Netherlands, it is 6.5 percentage points; and in the UK, on the opposite end of the spectrum, it is less than half a percentage point. My argument, again, offers an explanation for why this is the case.

4.3 Redistribution

Turning to the inferential statistics, I present the analysis of redistribution preferences based on the Eurobarometer 58.0 in two parts. First, I analyse individual-level data only, to test the argument that relative income is an important determinant of redistribution preferences (Hypothesis 1). Second, I turn to the results of the two-step procedure, and the empirical assessment of the argument that the relationship between redistribution preferences and fear of crime is contingent on the level of population heterogeneity (Hypothesis 2 and Hypothesis 3).

4.3.1 Relative income

To test my expectation about a negative relative income effect on redistribution preferences, I begin by estimating a pooled individual-level logit model with support for redistribution as the dependent variable. To account for the clustered structure of the data, moreover, I use Huber-White robust standard errors clustered to obtain correct error estimates.

The results of this exercise are reported in Table 3. Model 1 includes the relative income variable only, while Model 2 adds the battery of controls (age, gender, education, unemployment, and labour market status). Model 2 also includes fear of crime as an independent variable, the estimated effect of which gives the average across all individuals (and hence across all countries with varying levels of population heterogeneity) included in the sample. I return to this effect in detail with the two-step analysis below, but suffice to say that the estimated effect here is positive — meaning that fear of crime is, on average, associated with increased support for redistribution — and significant at the 90%-level. In order to simplify comparison with the two-step analysis, Table 3 reports 'raw' logit coefficients rather than odds ratios, giving the linear effect of the covariates on the log-odds of a positive outcome on the dependent variable. Positive coefficients thus indicate a positive effect on the probability of supporting redistribution, whilst negative coefficients indicate a negative effect.

Table 3: Individual-level determinants of redistribution preferences

	Model 1	Model 2
Relative income	-0.0839***	-0.0629***
	(0.0109)	(0.0113)
Fear of crime	–	0.137*
		(0.0832)
Age	–	-0.00200
		(0.00272)
Education	–	-0.0778***
		(0.0232)
Female	–	0.136**
		(0.0631)
Unemployed	–	0.184
		(0.115)
In labour force	–	-0.170***
		(0.0602)
Constant	0.904***	1.460***
	(0.137)	(0.248)
Countries	16	16
Observations	10,360	10,278
BIC	12,090	11,881

Logit regressions.
DV: Support for redistribution.
Reported numbers are logit coefficients.
Robust S.E. clustered by country in parentheses.
Two-tailed significance tests:
*** p<0.01 ** p<0.05 * p<0.1

A number of interesting points emerge from the results in Table 3. Although not of importance for the main argument of this paper, several of the control variables are significant determinants of redistribution preferences, generally in line with previous findings. Education has a negative effect, as does being in the labour force, whilst being a woman is positively associated with support for redistribution. On the other hand, neither the effect of age nor that of unemployment is significantly different from the null of no effect.

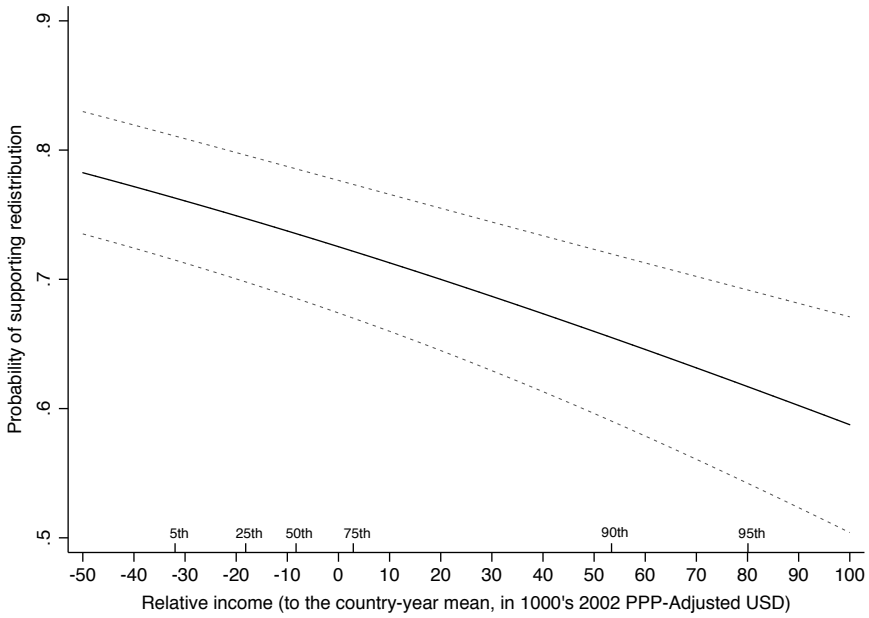
More importantly, the estimated effect of relative income — as the difference in real terms between a respondent's income and the mean in the country in which he or she lives — is negative, and highly significant at the 99% level. This means that as an individual's income increases relative to the mean, the probability of supporting redistribution falls. This result is in line with Hypothesis 1, and the argument that relative income is an important (and negative) determinant of support for redistribution.

To better illustrate this effect, Figure 6 plots the average predicted probability of supporting redistribution for the range of observed values on the relative income variable, together with 95% confidence intervals. Average predicted probabilities are calculated by setting the variable of interest (in this case, relative income) to some given value or range of values, while letting all the other covariates in the model assume all their observed values, and calculating separate predictions for all such combinations. These estimated probabilities are then averaged to produce the average predicted probability.

Figure 6 clearly shows that relative income has an all but negligible effect on redistribution preferences. As you travel up the sample income distribution — the percentiles of which are indicated on the x-axis — the probability of supporting redistribution significantly declines. At the 5th percentile, corresponding to an annual income of approximately 32,000 2002 PPP-adjusted USD below the country-mean, the probability of supporting redistribution is just above 76.3%. At the median income, at around 8,300 USD below the mean, the corresponding probability falls to about 73.5%, and at the country-mean (where the relative

income variable is 0), it is 72.5%. Moving up the income distribution above the mean, the probability of supporting redistribution then drastically falls, especially in the top decile: at the 90th percentile it is 65.5% (at 53,400 USD above the mean), at the 95th percentile (80,000 USD above the mean) it is 61.7%, and at the 99th percentile (at about 100,000 USD above the mean), it is 58.6%.

Figure 6: Average predicted probabilities of supporting redistribution



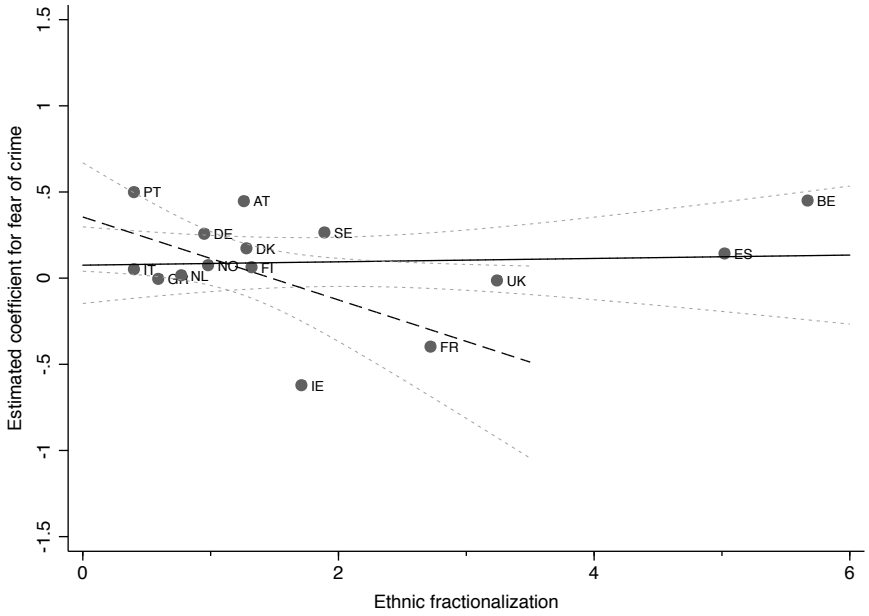
4.3.2 Fear of crime and population heterogeneity

Although interesting in its own right, the relationship between relative income and redistribution is not the main thrust of my argument: that fear of crime matters for redistribution preferences, and that this effect varies with the level of population heterogeneity. As stated in Hypothesis 2 and 3, I expect fear of crime to be positively associated with support for redistribution when the level of population heterogeneity is low, but that this effect will decline as the level of heterogeneity increases. It is to these expectations that I now turn.

To recapitulate very briefly, I test this side of the argument using a two-step strategy. In the first step, I run separate logit models in each of the 15 countries for which I have data, each similar in specification to Model 2 in Table 3 above. Then, in the second step, I regress the estimated coefficients for fear of crime from the first-step on the index of ethnic fractionalization, together the battery of macro-level controls, employing the approach developed by Borjas and Sueyoshi (1994), Lewis and Linzer (2005), and Huber, Kernell, and Leoni (2005) to account for the uncertainty in the dependent variable.

I do not report the results of the first-step regressions. Rather, and more interestingly, Figure 7 plots the estimated coefficients for fear of crime from the first-step against the level of ethnic fractionalization. The solid line gives the linear prediction from a bivariate regression estimated on all 15 observations, and the dashed line the prediction from a regression based on a restricted sample with Belgium, Spain, and the United Kingdom — as the three countries with the highest level of fractionalization, and the most apparent outliers — excluded. Admittedly, these results are ambiguous with respect to my theoretical argument: whereas the bivariate regression line is negative (as expected) when the outliers are excluded, it is positive when they are not. Likewise, whilst the bivariate association is not significant at any conventional level when estimated on all observations, it is marginally significant when based on the reduced sample ($\beta = -0.24, p < 0.10$).

Figure 7: Estimated coefficients from first-step regressions



To check whether this null finding is robust to the inclusion of other variables, Table 4 reports the results from the more systematic multivariate second-step analysis. Given the patterns observed in Figure 7, moreover, I report the results from three models estimated on different samples of countries, gradually excluding the outliers noted above. As I have said before, I want to emphasize that an important limitation of the empirical analysis of this paper is the small number of countries for which I have the necessary data: here 15, and in total 18 in the analysis of the ESS below. This has the implication of making the second-step regressions very sensitive to the behaviour of individual observations, meriting caution when looking at the results. Moreover, whilst excluding outlying observations is useful for exploring general patterns and trends, I am aware that this comes at the cost of making the analysis preliminary in nature. For these reasons, the analysis developed here should be read as a first and exploratory test, not as a final one, leaving more work to be done in subsequent research.

Turning to the results in Table 4, Model 1 includes all countries for which I have data. Since the second-step models have a linear structure, with the logit coefficient of fear of crime form the first-step modelled as a function of the macro-variables, the coefficients in Table 4 give the marginal effect of the independent variables on $\hat{\beta}_{crime}$. Although the effect of ethnic fractionalization is now in the right direction, it remains just marginally different from zero. This means that the level of population heterogeneity has no certain effect on the relationship between fear of crime and support for redistribution, implying that Hypothesis 2 and 3 do not receive support from the results of Model 1.

Model 2 and Model 3 estimate the same model but exclude the countries with the highest scores on the fractionalization variable. Model 2 excludes Belgium and Spain, with fractionalization scores of 5.7 and 5.0 respectively (compared to the second-step sample median of 1.28), and Model 3 also eliminates the United Kingdom, with a score of 3.2 (the third highest in the sample). Excluding these countries greatly increases the significance of the results, as well as the estimated magnitude of the effect of population heterogeneity on the coefficient for fear of crime. In Model 2, the effect of fractionalization remains insignificant, but has the correct sign, and increases about six times in size. When the UK is excluded in Model 3, by contrast, the effect of ethnic fractionalization becomes both highly significant at the 99% confidence level, and is estimated to be more than twice as large as in Model 2. This suggests that as the level of population heterogeneity increases, the association between fear of crime and support for redistribution weakens.

These results provide mixed evidence for Hypothesis 2 and 3. On the one hand, ethnic fractionalization has no significant effect on the coefficient for fear of crime when estimated on the full set of 15 countries, or when just the two most obvious outliers — Belgium and Spain — are excluded from the sample. On the other hand, the estimated effect is both highly significant and in the theorized direction when the sample is limited to exclude all of Belgium, Spain, and the UK, as the three countries with the highest levels of ethnic fractionalization.

Table 4: Second-step results for redistribution

	Model 1	Model 2[a]	Model 3[b]
Ethnic fractionalization	-0.0192	-0.116	-0.343***
	(0.0375)	(0.0849)	(0.0857)
Public social expenditure	0.0128	0.0194	0.0544***
	(0.0217)	(0.0214)	(0.0128)
GDP per capita	-0.315	-0.314	-0.232*
	(0.228)	(0.184)	(0.122)
Unemployment rate	-0.0706*	-0.0791**	-0.0659**
	(0.0340)	(0.0319)	(0.0234)
Federalism	0.431**	0.311**	0.145
	(0.183)	(0.132)	(0.102)
Constant	1.138	1.191	0.273
	(0.926)	(0.778)	(0.531)
Countries	15	13	12
Adjusted-R^2	0.269	0.355	0.717

a: Excludes Belgium and Spain. *b*: Excludes Belgium, Spain, and the UK.
FGLS Estimated Dependent Variable regressions with Borjas-weights.
DV: $\hat{\beta}_{crime}$ from first-step regressions (see Figure 7).
Standard errors in parentheses.
Two-tailed significance tests: *** p<0.01, ** p<0.05, * p<0.1

In order to address the question of whether this stems from purely statistical reasons or from some more substantive problem, it is necessary to examine further data beyond what I currently have available. To do so, however, forms a natural continuation of this paper's analysis.

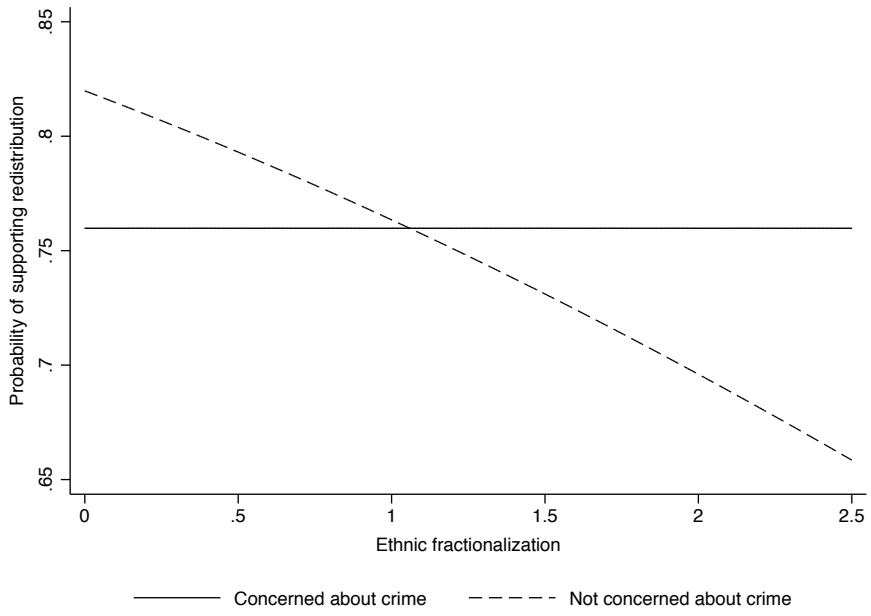
Keeping the preliminary nature of this analysis in mind, it is useful to recall the interactive structure of my argument and empirical analysis when interpreting the significant results from Model 3 above: the second-step regressions model the first-step coefficient on fear of crime as a linear function of the macro-variables. To illustrate the meaning of the second-step results in individual-level terms, therefore, it is possible to 'back-track' the two-step analysis by substituting predicted values of $\hat{\beta}_{crime}$ from the second-step into the first-step model, and use this to calculate the micro-level meaning of the macro-level results.

To do so, I first use the significant results from Model 3 to calculate predicted values of $\hat{\beta}_{crime}$ as a function of ethnic fractionalization, keeping the other covariates in the model constant at representative values (the mean for the continuous variables, and the median for the federalism dummy). Second, I estimate a new individual-level logit model identical in specification to the first-step regressions, on respondents from the twelve countries on which Model 3 is based, but substitute the estimated coefficient for fear of crime with the predictions of $\hat{\beta}_{crime}$ from the second-step. Finally, setting the remaining individual-level variables to their means (if continuous) or median (if categorical), I use this model to derive probabilities illustrating how the relationship between fear of crime and support for redistribution varies with the level of fractionalization.

Figure 8 plots the probabilities derived using this method. It should be emphasized that this is for illustration only, since Stata does not allow me to calculate uncertainty estimates for the predictions. Yet, it is useful for conveying the meaning of my argument in substantively interesting terms. The solid line gives the probability of supporting redistribution for an individual who is not concerned about crime. Given that fractionalization only affects the association between fear of crime and support for redistribution in the model, this

probability is constant, at about 76%. The dashed line, in turn, plots the probability of supporting redistribution for an identical individual from an identical country but who is concerned about crime. The negative slope of the line points to a central part of what my argument is about: population heterogeneity has a moderating effect on the association between fear of crime and support for redistribution. With both the macro- and micro-level covariates kept at representative levels, moreover, the probabilities show how the results derived above imply not only that the effect of fear of crime declines with the level of population heterogeneity, but also that the effect even turns negative at high levels of fractionalization. Again, whilst this implication should be taken with a pinch of salt, the probabilities in shown in Figure 8 nevertheless make one thing clear: the claim that population heterogeneity matters for the association between fear of crime and support for redistribution is highly plausible.

Figure 8: Predicted probabilities of supporting redistribution

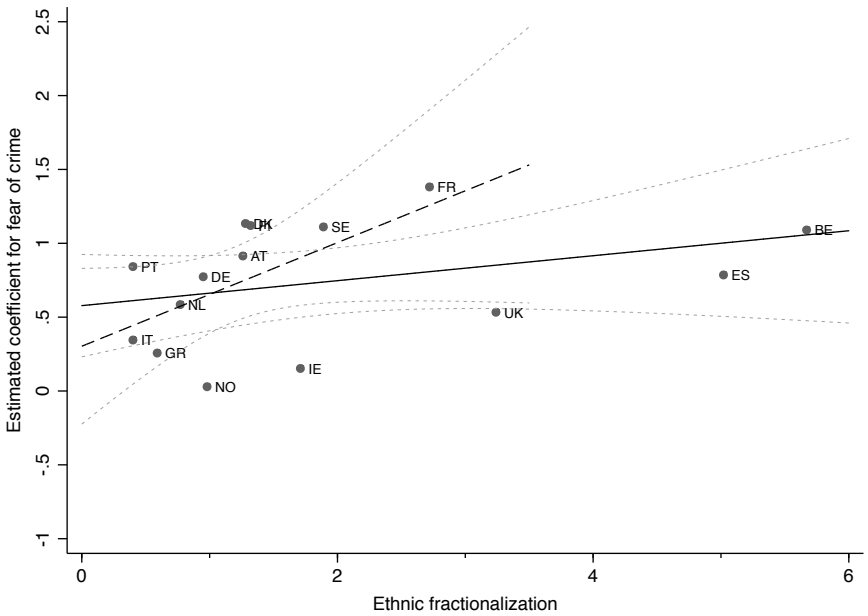


4.4 Policing

To test the other side of my argument — about policing and punishment — I perform a similar two-step analysis. As discussed above, the dependent variable used below is coded 1 if a respondent believes that 'better policing would reduce crime', and thus measures respondents' perception of the relative efficiency of policing as a means to reduce crime. Although this comes with the drawback of making comparison with the results for redistribution less straightforward, it also comes with the benefit of allowing me to tap more directly into my theorized causal mechanism linking population heterogeneity to preferences for redistribution and policing, as perceptions of their relative efficiency as alternative means to deal with crime. Given this, I take it that this choice of variable is justified.

Figure 9 plots the estimated coefficients on fear of crime from the first-step, and the linear prediction from a bivariate regression of the coefficients on the index of ethnic fractionalization. The solid line is estimated on the entire

Figure 9: Estimated coefficients from first-step regressions



sample, whilst the dashed line plots the association when estimated on a sample that excludes Belgium, Spain, and the UK, as apparent outliers. Although not perfect, the results are in the general direction implied by my argument. The linear prediction is positive in both cases ($\beta = 0.08, p < 0.10$, and $\beta = 0.39, p < 0.01$, respectively), implying that the coefficient on fear of crime increases with the level of ethnic fractionalization: in other words, fear of crime is more strongly linked to the belief that better policing would reduce crime when the level of population heterogeneity is high compared to when it is low.

Table 5 presents the results of the more systematic second-step analysis. I estimate three models on different samples of countries, following on from the discussion above: Model 1 includes all 15 countries for which I have data; Model 2 excludes Belgium and Spain, as the two most heterogeneous countries; and Model 3 also excludes the UK, with the third highest level of fractionalization.

The results in Table 5 are in line with my theoretical expectations. The estimated effect of ethnic fractionalization is positive and statistically significant in all three models (at the 99% level in Model 1 and Model 3, and at the 90% level in Model 2), suggesting that as the level of population heterogeneity increases, individuals who are concerned about crime become more likely to think that better policing would be an efficient means to reduce crime. In theoretical terms, these results thus lend support the claim that population heterogeneity matters for the perceived efficiency of alternative crime prevention strategies: the higher the level of heterogeneity, amongst those concerned about crime, the more widespread the idea that more policing offers a solution.

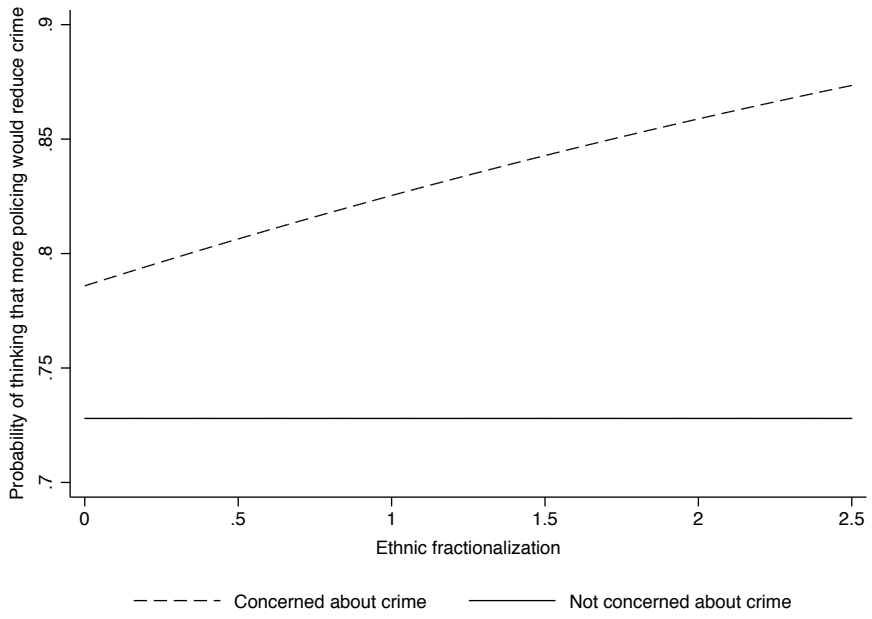
To illustrate the substantive implications of this result, I follow the same procedure as in the analysis of redistribution preferences. I first use Model 3 in Table 5 to calculate predicted values of $\hat{\beta}_{crime}$ as a function of ethnic fractionalization, holding the other variables in the model constant at representative values (again, at the mean for continuous variables, and at the median for categorical variables). Second, I estimate a pooled cross-national logit model with the same specification as the first-step regressions, restricting the sample to re-

Table 5: Second-step results for policing

	Model 1	Model 2[a]	Model 3[b]
Ethnic fractionalization	0.108***	0.128*	0.253***
	(0.0295)	(0.0669)	(0.0797)
Public social expenditure	0.0818***	0.0839***	0.0614**
	(0.0131)	(0.0176)	(0.0226)
GDP per capita	-0.421***	-0.434***	-0.450***
	(0.132)	(0.139)	(0.137)
Unemployment rate	-0.0479	-0.0542	-0.0587
	(0.0317)	(0.0377)	(0.0399)
Federalism	-0.0879	-0.0703	0.0170
	(0.114)	(0.137)	(0.149)
Constant	0.236	0.238	0.721
	(0.549)	(0.599)	(0.691)
Countries	15	13	12
Adjusted-R^2	0.638	0.612	0.627

a: Excludes Belgium and Spain. *b*: Excludes Belgium, Spain, and the UK.
FGLS Estimated Dependent Variable regressions with Borjas-weights.
DV: $\hat{\beta}_{crime}$ from first-step regressions (see Figure 9).
Standard errors in parentheses.
Two-tailed significance tests: *** p<0.01, ** p<0.05, * p<0.1

Figure 10: Probabilities of agreeing that 'better policing would reduce crime'



spondents from the countries included in Model 3, and finally substitute the estimated coefficient on fear of crime with the second-step predictions.

The resulting probabilities are in shown in Figure 10. The solid line represents the probability of supporting more policing for an individual not concerned about crime, and the dashed line gives the probabilities for someone with the same characteristics but who is concerned about crime. Again, the probabilities in Figure 10 nicely illustrate a central point of my theoretical logic: amongst those concerned about crime, the probability of thinking that better policing would be a useful means for reducing crime increases with the level of ethnic fractionalization. In this setup, moreover, whereas fear of crime always has a positive impact on views about policing efficacy, the magnitude of this effect increases considerably as the population grows more heterogeneous. To that end, whilst no firm conclusions can (or should) be drawn from this analysis, these results lend initial support for the policing side of my argument.

5 Analysis: European Social Survey

Given the ambiguity of the above results with respect to my expectations about redistribution preferences, I proceed re-examine Hypothesis 1 through 3 using the 2010 European Social Survey. Moreover, given that the ESS has been used extensively in the previous literature on redistribution preferences, employing it is further useful for making my results more readily comparable to those of others. Limiting the scope of the analysis to OECD countries, the sample includes respondents from Belgium, Switzerland, the Czech Republic, Germany, Denmark, Spain, Finland, France, the United Kingdom, Greece, Hungary, Ireland, Israel, the Netherlands, Norway, Poland, Sweden, and Slovenia.

5.1 Variables

Dependent variable: Redistribution preferences

To measure redistribution preferences, and in line with other authors using the ESS for similar purposes (Rueda and Stegmueller, 2014; Rueda, 2014; Finseraas, 2008; Rehm, 2009, 2007; Cusack, Iversen, and Rehm, 2006; Stegmueller, Scheepers, Rossteutscher, and de Jong, 2012; Jaeger, 2006, amongst many others), I use an item asking respondents if they 'strongly agree', 'agree', 'neither agree nor disagree', 'disagree', or 'strongly disagree' with the statement that 'the government should reduce differences in income levels'. For simplicity, I have transformed this into a binary variable with responses in the 'strongly agree' and 'agree' categories coded as 1, and all other non-missing responses as 0. Descriptive statistics for this and the other individual-level variables are provided in Table 6.

Fear of crime

To capture concerns about crime, I use an item that is virtually identical to that included in the Eurobarometer 58.0, and used in the empirical analysis above. This item asks 'how safe do you – or would you – feel walking alone in this area after dark', and records responses on a four-point Linkert-scale from 'very safe',

Table 6: Descriptive statistics

European Social Survey, Round 5 (2010)			
Substantive variables	Description	μ or %	σ
Redistribution preferences	1 = Supports redistribution 0 = Does not support redistribution	71.6%	–
Fear of crime	1 = Feel unsafe/very unsafe 0 = Feel safe/very safe	21.3%	–
Relative income	ln 10,000 2010 PPP-adjusted USD (See main text for details)	0	3.688
Controls	**Description**		
Age	Respondent's age in years	47.5	18.7
Female	1 = Female 0 = Male	52.3%	–
Education	Years of completed full-time education	12.0	3.5
Unemployment	1 = Unemployed 0 = Not unemployed	7.3%	–
Union member	1 = Union member 0 = Not a union member	19.1%	–
Labour market status	1 = Participates in the labour market 0 = Out of the labour market	89.8%	–

through 'safe' and 'unsafe', to 'very unsafe'. To simplify interpretation, I convert this into a binary variable with 'very unsafe' and 'unsafe' responses coded as 1, and 'safe' and 'very safe' responses as 0. For a more detailed treatment of the merits and drawbacks of this item in the context of my theoretical argument, see the discussion in Section 4.1 above.

Relative income

I use a similar approach to that described for the Eurobarometer to derive a measure of relative income, as the difference between a respondent's income and the mean income in the country in which he or she resides. Starting with the 2008 wave of the ESS, income is measured in ten non-equal bands (roughly) corresponding to the deciles in each country-specific income distribution. To construct the relative income variable, I (i) transform each category to its midpoint, (ii) use the formula from Hout (2004) to derive a midpoint for the open-ended top category, (iii) centre all observations on their respective country-means, and (iv) convert all figures to 10,000s 2010 PPP-adjusted US dollars, using conversion rates from the OECD. Again, this implies that the relative income variable measures the difference, in real terms, between a respondent's income and the country-mean income, with negative values denoting incomes below the mean, and positive values incomes above the mean.

Individual-level controls

In addition to the substantive variables of interest, I include a battery of standard control variables on the individual-level: age (respondents age in years), education (dummy for having attended tertiary education), gender (dummy for being female), unemployment (dummy for being unemployed), labour force membership (dummy for being in the labour force), and union membership (dummy for being a union member).

5.2 Redistribution

As for the Eurobarometer, I proceed with the analysis of the ESS in two parts: first, I look at the individual-level determinants of redistribution preferences to test the expectation about a negative relative income effect (Hypothesis 1), and second, in what forms the main part of the analysis, I use a two-step strategy to estimate the effect of population heterogeneity on the association between fear of crime and support for redistribution (Hypothesis 2 and 3).

5.2.1 Relative income

Thus, I begin the analysis of the ESS data by assessing the expectation that relative income is an important negative determinant of support for redistribution on the individual-level. I follow a similar procedure as for the Eurobarometer data: I estimate individual-level logit models with support for redistribution as the dependent variable, with relative income together with fear of crime and the battery of individual-level controls on the right hand side, and use Huber-White robust standard errors clustered by country to account within-country error correlations.

The results of the estimated models are reported in Table 7. Model 1 (without controls) and 2 (with controls) are based on the full sample of respondents from 18 countries, whilst Model 3 (without controls) and Model 4 (with controls) are estimated on a restricted sample with former Soviet countries excluded. Overall, the results are very similar to those derived using the Eurobarometer data, and hence in line with my expectation that relative income is a significant negative predictor of support for redistribution. Although the magnitude of the estimated effect of relative income differs somewhat between the two full models, with the effect being larger in Model 2 where the set of post-communist countries are included, it is highly statistically significant (at the 99% level) and has the correct (negative) sign in all specifications. This means that as relative income increases, the probability of supporting redistribution declines.

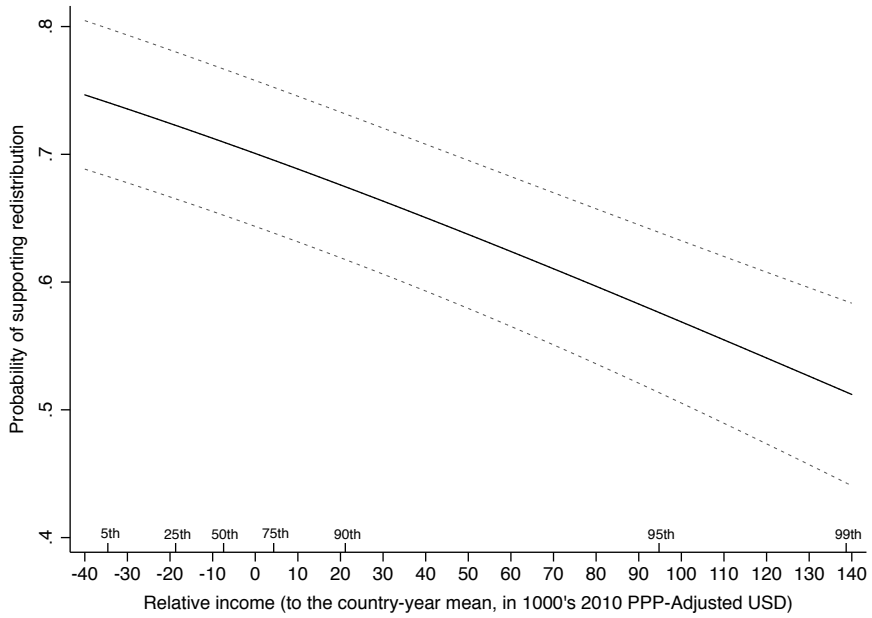
Table 7: Individual-level determinants of redistribution preferences

	Model 1	Model 2	Model 3[a]	Model 4[a]
Relative income	-0.0753***	-0.0611***	-0.0699***	-0.0581***
	(0.00891)	(0.00884)	(0.00863)	(0.00900)
Fear of crime	–	0.215**	–	0.247***
		(0.0881)		(0.0918)
Age	–	0.00608***	–	0.00546***
		(0.00179)		(0.00211)
Education	–	-0.0408***	–	-0.0318***
		(0.00896)		(0.00850)
Female	–	0.187***	–	0.173***
		(0.0382)		(0.0433)
Unemployed	–	0.263**	–	0.199*
		(0.124)		(0.119)
In labour force	–	0.159	–	0.183
		(0.0998)		(0.115)
Union member	–	-0.105	–	-0.0693
		(0.179)		(0.185)
Constant	0.940***	1.006***	0.851***	0.833***
	(0.137)	(0.194)	(0.149)	(0.217)
Countries	18	18	14	14
Observations	28,411	27,809	22,435	22,061
BIC	33,406	32,421	27,089	26,456

a: Excludes former Soviet countries.
Logit regressions.
DV: Support for redistribution.
Reported numbers are logit coefficients.
Huber-White robust standard errors clustered by country in parentheses.
Two-tailed significance tests: *** p<0.01, ** p<0.05, * p<0.1

To illustrate this effect, I use the results from Model 4 in Table 7 to calculate average predicted probabilities of supporting redistribution for different levels of relative income, as shown in Figure 11. The dashed lines give 95% confidence intervals for the predictions. The pattern is clear: when relative income goes up, the probability of supporting redistribution goes down. At the 5th percentile in the sample income distribution (corresponding to an income of 34,600 2010 PPP-Adjusted USD per year below the country-mean), the probability of supporting redistribution is 74.1%. At the median income, at about 7,500 USD below the mean, the corresponding probability is 71.0%, and at the mean it is about 70%. Parallel to the results from the Eurobarometer, support for redistribution then declines rapidly towards the right tail of the income distribution: at the 90th percentile (21,000 USD above the mean) it falls to 67%, at the 95th percentile (94,800 USD above the mean) it is 57%, and at the 99th percentile it is 49.9%. Again, therefore, the argument that relative income is an important determinant of redistribution preferences is clearly supported by this paper's analysis.

Figure 11: Average predicted probabilities of supporting redistribution

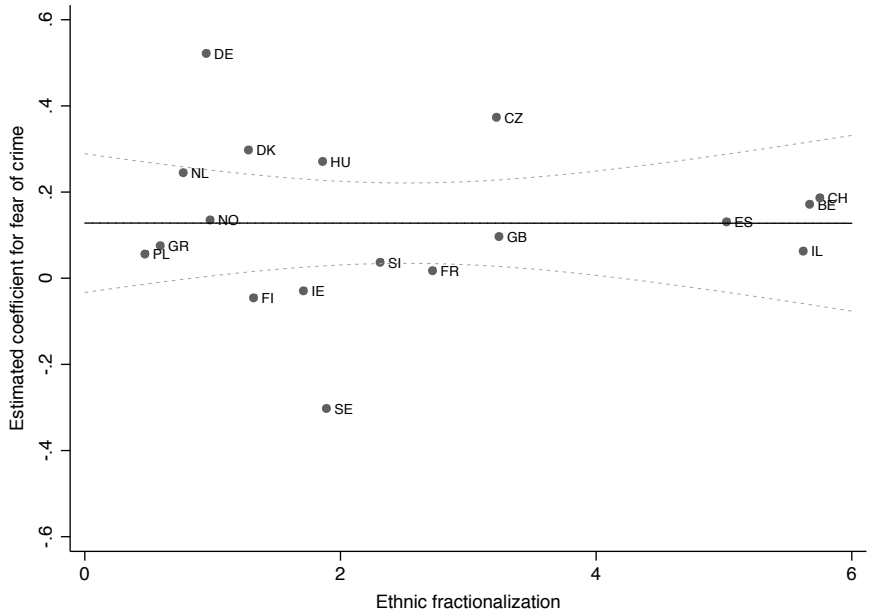


5.2.2 Fear of crime and population heterogeneity

With this result in hand, I turn to the empirical analysis of the main argument of this paper: that the effect of fear of crime on support for redistribution declines with the level of population heterogeneity. I use the same two-step strategy as for the Eurobarometer, the main features of which should now be familiar.

Figure 12 plots the estimated coefficients from the set of first-step logit regressions against the ethnic fractionalization variable, together with the bivariate association between the two. Again, these initial results neither contradict nor provide any particular support for my theoretical argument. Whilst there is what appears to be a negative linear trend amongst the observations in the lower half of the fractionalization variable, this does not hold true for the set of observations with very high fractionalization scores. The bivariate association is further essentially zero, indicating no association between ethnic fractionalization and the individual-level coefficient on fear of crime.

Figure 12: Estimated coefficients from first-step regressions



To explore these patterns more systematically, Table 8 reports the results of the second-step multivariate analysis. I report the results of four models, estimated on different macro-level samples. Model 1 includes all 18 countries for which I have the prerequisite data. The effect of fear of crime is negative — in line with my expectations — but not statistically significant. Model 2, in turn, excludes the four former Soviet countries (the Czech Republic, Slovenia, Hungary, and Poland) that are now members of the OECD. Given that there is reason to expect these countries to differ from the remaining and predominantly West European countries included in the sample on a number of variables with consequences for redistribution preferences (Corneo and Gruner, 2002), there is a theoretical rationale for leaving them out. In line with this reasoning, doing so both increases the magnitude of the negative effect of ethnic fractionalization, as well as boosts its significance to within the 95% level.

Model 3 additionally excludes Israel, which given both its history of large-scale immigration of Jews from different ethnic and national backgrounds, and the contemporary division between Israeli Jews and Israeli Arabs, there is reason to believe stands out as a special case in my analysis. As expected, therefore, leaving Israel out further increases the magnitude as well the significance of the estimated effect of ethnic fractionalization. Model 4, finally, parallels Model 3 in Table 4 by further excluding the countries with the highest scores on the fractionalization variable: in this case Belgium, Spain, and Switzerland. In line with the results from the Eurobarometer, this again has the effect of further increasing the magnitude of the negative effect of fractionalization on $\hat{\beta}_{crime}$.

I follow the same procedure as in the above for illustrating the individual-level implications of these results. First, I use Model 4 in Table 8 to derive predicted values of $\hat{\beta}_{crime}$ for different levels of ethnic fractionalization. Second, I substitute these predictions into an individual-level logit model with the same specification as the first-step regressions estimated on respondents from the countries included in Model 4, and finally use this model to calculate probabilities (keeping all covariates on either level at their mean or median).

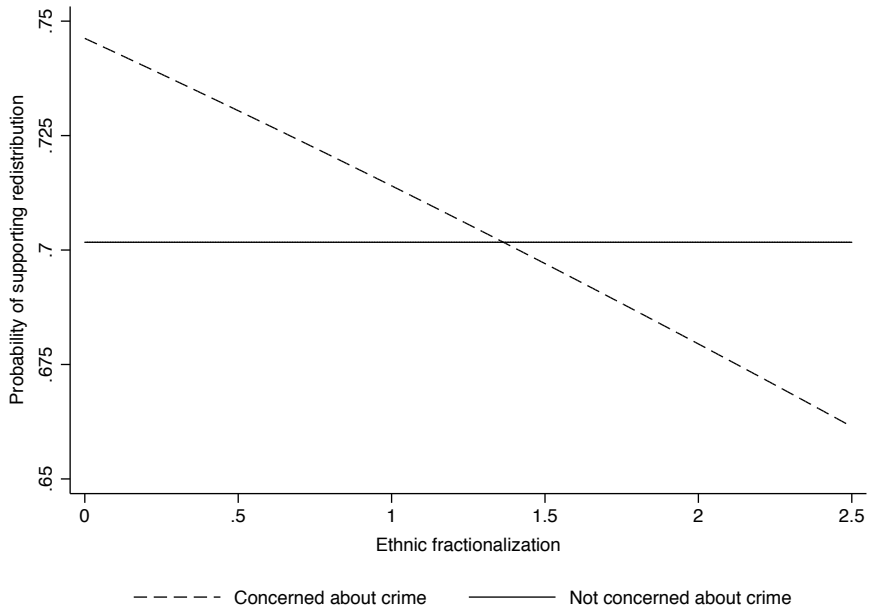
Table 8: Second-step results for redistribution

	Model 1	Model 2[a]	Model 3[b]	Model 4[c]
Ethnic fractionalization	-0.0350	-0.0546**	-0.0788***	-0.164***
	(0.0291)	(0.0252)	(0.0221)	(0.0367)
Public social expenditure	-0.00676	-0.00414	0.0071	0.0130
	(0.00989)	(0.0110)	(0.0142)	(0.0153)
GDP per capita	-0.0914	-0.0609	0.0120	0.00643
	(0.0666)	(0.0538)	(0.0557)	(0.0740)
Unemployment rate	-0.0214**	-0.0164	-0.0083	-0.0116
	(0.0101)	(0.00970)	(0.0101)	(0.0170)
Federalism	0.227	0.282*	0.361***	0.371***
	(0.149)	(0.141)	(0.110)	(0.0867)
Constant	0.791*	0.595	0.0066	0.0141
	(0.447)	(0.438)	(0.551)	(0.582)
Countries	18	14	13	10
Adjusted-R^2	0.087	0.188	0.249	0.330

a: Excludes former Soviet countries. *b*: Excludes former Soviet countries and Israel.
c: Excludes former Soviet countries, Israel, Belgium, Spain, and Switzerland.
FGLS Estimated Dependent Variable regressions with Borjas-weights.
DV: $\hat{\beta}_{crime}$ from first-step regressions (see Figure 12).
Standard errors in parentheses.
Two-tailed significance tests: *** p<0.01, ** p<0.05, * p<0.1

Figure 13 plots the resulting probabilities. The solid line gives the probability of supporting redistribution for an individual not concerned about crime, and the dashed line the probabilities for an individual who is concerned about crime. The negative slope of the dashed line illustrates a key point: the effect of fear of crime on support for redistribution declines with the level of population heterogeneity. With the other covariates set to representative levels, moreover, the probabilities again show how the results imply that fear of crime has divergent effects on redistribution preferences in different contexts. When the level of population heterogeneity is low, the probability of supporting redistribution is higher for those concerned about crime than for those not concerned about crime, in line with the logic of my argument. At high levels of heterogeneity, however, the opposite holds true: individuals who are not concerned about crime are more — not less — likely than those who are concerned about crime of agreeing that the government should reduce differences in income levels. Overall, these results thus closely parallel those from the Eurobarometer.

Figure 13: Predicted probabilities of supporting redistribution



6 Conclusion

To conclude this paper, it is useful to outline the substantive relevance of my theoretical argument and preliminary results, as well as to emphasize their implications for further research. The main thrust of this paper is as straightforward as it is important: inequality has differential effects on demand for redistribution depending on the level of population heterogeneity. In high contexts of low ethnic heterogeneity, I have argued that more inequality leads to more support for redistribution, because redistribution is seen to offer a way of reducing concern about crime. When the level of population heterogeneity is high, on the other hand, inequality has no such effect: instead of leading to more support for redistribution, fear of crime generates increased support for more policing and harsher punishments. This context-dependent effect of inequality on support for redistribution, through the externality mechanism of fear of crime, is the main take-home message of this paper. Moreover, although the empirical analysis developed above only preliminary, it has shown that there are good reasons for thinking both that these expectations are empirically valid, and that their substantive implication is considerable.

These findings are interesting in at least two important respects. First, they offer a new way of thinking about the conventional wisdom that more heterogeneity is associated with less redistribution. In the previous literature, arguments about heterogeneity have generally taken one of two alternative forms. On the one hand, Alesina and Glaeser (2004), Luttmer (2001), Shayo (2009), and others, have suggested that heterogeneity matters because it decreases support for redistribution amongst the poor, who may refuse to support redistribution when it would also benefit members of groups other than their own; others, including Rueda (2014), Lupu and Pontusson, and Gilens (1999), have emphasized how heterogeneity amongst the poor makes the non-poor less willing to support redistribution. My argument offers novel alternative to these well-known claims. Second, in emphasizing externalities of inequality as a key mechanism linking

inequality to demand for redistribution, the argument of this paper directs attention to an important logic that has hitherto been largely overlooked by previous authors. If externalities of inequality exert an important influence on demand for redistribution, and if this effect varies with the social and political context, it follows that a better understanding of this mechanism may help to explain the unresolved puzzle of why the relationship between inequality and redistribution is what it is (or is not).

Looking ahead, future research can expand on the argument and findings of this paper in three separate directions. First, the preliminary empirical analysis of this paper should be supplemented by one that allows for a stricter and more systematic empirical test of my argument. To do so, it should rely on data with a wider scope than that used above, as well test my theorized individual-level mechanism linking heterogeneity to preferences more explicitly, preferably using an experimental setup. Second, whilst this paper has dealt with the 'demand-side' of redistribution, it has not considered its 'supply-side', as the question of how preferences are aggregated and translate into actual political behaviour. Hence, developing my theoretical model to incorporate an aggregation mechanism is a natural continuation of the work begun here. Third, and relatedly, an interesting issue concerns the extent to which political parties themselves can be thought to influence the trade-off between redistribution and policing as alternative means to deal with crime. In a European context, a common observation is that extreme- and populist-right parties often emphasize a link between heterogeneity and crime in their political rhetoric. It is not implausible to expect, therefore, that such parties may have an important influence on the extent to which fear of crime comes to be associated with support either for policing/punishment or for redistribution. These are interesting points, which I look forward to exploring in future DPhil work.

References

[1] Adcock, Robert, and David Collier. 2001. Measurement Validity: A Shared Standard for Qualitative and Quantitative Research. *American Political Science Review* 95: 529-546.

[2] Alesina, Alberto, Arnaud Devleeschauwer, William Easterly, Sergio Kurlat, and Romain Wacziarg. 2003. Fractionalization. NBER Working Paper No. 9411. Available at: http://www.nber.org/papers/w9411.

[3] Alesina, Alberto, and Eliana La Ferrara. 2005. Preferences for Redistribution in the Land of Opportunities. *Journal of Public Economics* 89: 897-931.

[4] Alesina, Alberto, and Paola Giuliano. 2009. Preferences for Redistribution. NBER Working Paper No. 14825. Available at: http://www.nber.org/papers/w14825.

[5] Alesina, Alberto, and Edward L. Glaeser. 2004. *Fighting Poverty in the US and Europe: A World of Difference*. Oxford: Oxford University Press.

[6] Alvaredo, Facundo, Anthony Atkinson, Thomas Piketty, and Emmanuel Saez. 2013. The Top 1 Percent in International and Historical Perspective. NBER Working Paper No. 19075. Available at: http://www.nber.org/papers/w19075.

[7] Atkinson, Anthony, Thomas Piketty, and Emmanuel Saez. 2009. Top Incomes in the Long Run of History. NBER Working Paper No. 15408. Available at: http://www.nber.org/papers/w15408.

[8] Barnes, Lucy. 2013. Does Median Income Matter? The Effects of Turnout on Government Spending. *Political Studies* 61: 82-100.

[9] Bartels, Larry. 2009. Economic Inequality and Political Representation. In *The Unsustainable American State*, eds. Lawrence Jacobs and Desmond King. Oxford: Oxford University Press.

[10] Becker, Gary. 1968. Crime and Punishment: An Economic Approach. *Journal of Political Economy* 76: 169-217.

[11] Bell, Linda, and Richard Freeman. 2001. The Incentive for Working Hard: Explaining Hours Worked Differences in the US and Germany. *Labour Economics* 8: 181-202.

[12] Benabou, Roland. 1996. Inequality and Growth. In *NBER Macroeconomic Annual 1996, Volume 11.* Cambridge, MA: MIT Press.

[13] Benabou, Roland, and Efe A. Ok. 2001. Social Mobility and the Demand for Redistribution: The POUM Hypothesis. *Quarterly Journal of Economics* 116: 447-487.

[14] Boix, Carles. 2003. *Democracy and Redistribution.* Cambridge: Cambridge University Press.

[15] Borjas, George, and Glenn T. Sueyoshi. 1994. A Two-Stage Estimator for Probit Models with Structural Group Effects. *Journal of Econometrics* 64: 165-182.

[16] Bourguignon, Francois. 2001. Crime as a Social Cost of Poverty and Inequality: A Review focusing on Developing Countries. In *Facets of Globalization: International and Local Dimensions of Development*, eds. Shahid Yusuf, Simon Evenett, and Weiping Wu. Washington, D.C.: The World Bank.

[17] Brooks, Clem, and Jeff Manza. 2006a. Social Policy Responsiveness in Developed Democracies. *American Sociological Review* 71: 474-94.

[18] Brooks, Clem, and Jeff Manza. 2006b. Why do Welfare States Persist? *The Journal of Politics* 68: 816-827.

[19] Brooks, Clem, and Jeff Manza. 2007. *Why Do Welfare States Persist: The Importance of Public Opinion in Democracies*. Chicago, IL: University of Chicago Press.

[20] Checchi, Daniele, and Antonio Filippin. 2004. An Experimental Study of the POUM Hypothesis. In *Inequality, Welfare and Income Distribution: Experimental Approaches*, ed. Franck Cowell. Bingley: Emerald Group Publishing.

[21] Corneo, Giacomo, and Hans Peter Gruner. 2002. Individual Preferences for Political Redistribution. *Journal of Public Economics* 83: 83-107.

[22] Cusack, Thomas, Torben Iversen, and Philipp Rehm. 2006. Risks at Work: The Demand and Supply Sides of Government Redistribution. *Oxford Review of Economic Policy* 22: 365-389.

[23] Dimick, Matthew, David Rueda, and Daniel Stegmueller. 2014. The Altruistic Rich? Inequality and Other-Regarding Preferences for Redistribution in the US. Unpublished manuscript. Department of Politics and International Relations, University of Oxford.

[24] Downs, Anthony. 1957. *An Economic Theory of Democracy*. New York, NY: Harper & Row.

[25] Ehrlich, Isaac. 1973. Participation in Illegitimate Activities: A Theoretical and Empirical Investigation. *Journal of Political Economy* 81: 521-565.

[26] Ehrlich, Isaac. 1996. Crime, Punishment, and the Market for Offenses. *Journal of Economic Perspectives* 10: 43-67.

[27] ESS Round 5: European Social Survey Round 5 Data. 2010. Data File Edition 3.1. Norwegian Social Science Data Services, Norway - Data Archive and Distributor of ESS Data.

[28] Estevez-Abe, Margarita, Torben Iversen, and David Soskice. 2001. Social Protection and the Formation of Skills: A Reinterpretation of the Welfare

State. In *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, eds. Peter Hall and David Soskice. Oxford: Oxford University Press.

[29] European Commission. 2012. Eurobarometer 58.0, September-October 2002. European Opinion Research Group, Brussels. GESIS Data Archive, Cologne. ZA3692, Data File Version 1.0.1. DOI:10.4232/1.10952.

[30] Evans, Geoffrey, and James Tilley. 2012. The Depoliticization of Inequality and Redistribution: Explaining the Decline of Class Voting. *Journal of Politics* 74: 963-976.

[31] Fajnzlber, Pablo, Daniel Lederman, and Norman Loayza. 2002. Inequality and Violent Crime. *Journal of Law and Economics* 45: 1-40.

[32] Fay, Michael, and Barry Graubard. 2001. Small-Sample Adjustments for Wald-Type Tests Using Sandwich Estimators. *Biometrics* 57: 1198-1206.

[33] Fearon, James. 2003. Ethnic and Cultural Diversity by Country. *Journal of Economic Growth* 8: 195-222.

[34] Fehr, Ernst, and Klaus M. Schmidt. 2006. The Economics of Fairness, Reciprocity and Altruism: Experimental Evidence and New Theories. In *The Handbook of the Economics of Giving, Altruism, and Reciprocity, Volume 1*, eds. Serge-Christophe Kolm and Jean Mercier Ythier. London: Elsevier.

[35] Ferraro, Kenneth F., and Randy LaGrange. 1987. The Measurement of Fear of Crime. *Sociological Inquiry* 57: 70-97

[36] Finseraas, Henning. 2008. Income Inequality and Demand for Redistribution: A Multilevel Analysis of European Public Opinion. *Scandinavian Political Studies* 32: 94-119.

[37] Freeman, Richard. 1982. Crime and the Labour Market. NBER Working Paper No. 1031. Available at: http://www.nber.org/papers/w1031.

[38] Freeman, Richard. 1996. Why Do So Many Young American Men Commit Crimes and What Might We Do About It? *Journal of Economic Perspectives* 10: 25-43.

[39] Galor, Oded, and Joseph Zeira. 1993. Income Distribution and Macroeconomics. *Review of Economic Studies* 60: 35-52.

[40] Gilens, Martin. 1996. "Race Coding" and White Opposition to Welfare. *American Political Science Review* 90: 593-604.

[41] Gilens, Martin. 1999. *Why Americans Hate Welfare: Race, Media, and the Politics of Anti-Poverty Policy.* Chicago, IL: University of Chicago Press.

[42] Gilliam, Franklin D. Jr., and Shanto Iyengar. 2000. The Influence of Local Television News on the Viewing Public. *American Journal of Political Science* 44: 560-573.

[43] Gingrich, Jane. 2014. Visibility, Values, and Voters: The Informational Role of the Welfare State. *Journal of Politics* 76: 565-580.

[44] Gingrich, Jane, and Ben Ansell. 2012. Preferences in Context: Micro Preferences, Macro Contexts, and the Demand for Social Policy. *Comparative Political Studies* 45: 1624-1654

[45] Hale, C. 1996. Fear of Crime: A Review of the Literature. *International Review of Victimology* 4: 79-150.

[46] Hout, Michael. 2004. Getting the Most Out of the GSS Income Measures. GSS Methodological Report No. 101.

[47] Huber, John D., Gerogia Kernell, and Eduardo L. Leoni. 2005. Institutional Context, Cognitive Resources and Party Attachments Across Democracies. *Political Analysis* 13: 365-386.

[48] Huber, John D., and Piero Stanig. 2009. Individual Income and Voting for Redistribution Across Democracies. Unpublished Manuscript. Department of Political Science, Columbia University.

[49] Huddy, Leonie, and Stanley Feldman. 2009. On Assessing the Political Effects of Racial Prejudice. *Annual Review of Political Science* 12: 423-447.

[50] Hurwitz, Jon, and Mark Peffley. 1997. Public Perceptions of Race and Crime: The Role of Racial Stereotypes. *American Journal of Political Science* 41: 375-401.

[51] Hurwitz, Jon, and Mark Peffley. 2005. Playing the Race Card in the Post-Willie Horton Era. *Public Opinion Quarterly* 69: 99-112.

[52] Idema, Timo, and David Rueda. 2011. Redistribution Preferences and Life-Cycle Income. Paper presented at the 2011 APSA Annual Meeting in Seattle, WA.

[53] Imrohoroglu, Ayse, Antonio Merlo, and Peter Rupert. 2000. On the Political Economy of Income Redistribution and Crime. *International Economic Review* 41: 1- 25.

[54] Inglehart, Ronald, and Scott C. Flanagan. 1987. Value Change in Industrial Societies. *American Political Science Review* 81: 1289-1319.

[55] Iversen, Torben, and David Soskice. 2001. An Asset Theory of Social Preferences. *American Political Science Review* 95: 875-893.

[56] Iversen, Torben, and David Soskice. 2006. Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others. *American Political Science Review* 100: 165-181.

[57] Iversen, Torben, and David Soskice. 2009. Distribution and Redistribution: The Shadow From the Nineteenth Century. *World Politics* 61: 438-486.

[58] Jaeger, Mads Meier. 2006. Welfare Regimes and Attitudes Towards Redistribution: The Regime Hypothesis Revisited. *European Sociological Review* 22: 157-170.

[59] Jusko, Karen L., and W. Phillips Shively. 2005. Applying a Two-Step Strategy to the Analysis of Cross-National Public Opinion Data. *Political Analysis* 13: 327-344.

[60] Kang, Shin-Goo, and Bingham Powell. 2010. Representation and Policy Responsiveness: The Median Voter, Election Rules, and Redistributive Welfare Spending. *Journal of Politics* 72: 1014-1028.

[61] Kelly, Morgan. 2000. Inequality and Crime. *Review of Economics and Statistics* 82: 530-539.

[62] Kenworthy, Lane, and Leslie McCall. 2008. Inequality, Public Opinion, and Redistribution. *Socio-Economic Review* 6: 35-68.

[63] Kenworthy, Lane, and Jonas Pontusson. 2005. Rising Inequality and the Politics of Redistribution in Affluent Countries. *Perspectives on Politics* 3: 449-471.

[64] King, Gary, Christopher J.L. Murray, Joshua A. Salomon, and Ajay Tandon. 2003. Enhancing the Validity and Cross-Cultural Comparability of Measurement in Survey Research. *American Political Science Review* 97: 567-583.

[65] Kreft, Ita, and Jan de Leeuw. 1998. *Introducing Multilevel Modeling.* London: Sage.

[66] Leoni, Eduardo. 2008. Analyzing Multiple Surveys: Results from Monte Carlo Experiments. Unpublished manuscript. Department of Political Science, Columbia University.

[67] Levitt, Steven. 1996. Inside the Interrogation Room. *Journal of Criminal Law and Criminology* 86: 266-303.

[68] Levitt, Steven. 1997. Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime. *American Economic Review* 87: 270-290.

[69] Levitt, Steven. 2002. Using Electoral Cycles in Police Hiring to Estimate the Effect of Police on Crime: Reply. *American Economic Review* 92: 1244-1250.

[70] Levitt, Steven, and Thomas Miles. 2007. Empirical Study of Criminal Punishment. In *Handbook of Law and Economics*, eds. Mitchell Polinsky and Steven Shavell. London: Elsevier.

[71] Lewis, Jeffrey, and Drew A. Linzer. 2005. Estimating Regression Models in Which the Dependent Variable Is Based on Estimates. *Political Analysis* 13: 345-364.

[72] Lindert, Peter. 2004. *Growing Public: Social Spending and Economic Growth Since the Eighteenth Century*. Cambridge: Cambridge University Press.

[73] Lupu, Noam, and Jonas Pontusson. 2011. The Structure of Inequality and the Politics of Redistribution. *American Political Science Review* 105: 316-336.

[74] Luttmer, Erzo. 2001. Group Loyalty and the Taste for Redistribution. *Journal of Political Economy* 109: 500-528.

[75] Maas, Cora, and Joop Hox. 2004. Robustness Issues in Multilevel Regression Analysis. *Statistica Neerlandica* 58: 127-137.

[76] Macmillan, Ross. 2000. Adolescent Victimization and Income Deficits in Adulthood: Rethinking the Costs of Criminal Violence from a Life-Course Perspective. *Criminology* 38: 553-588.

[77] Macmillan, Ross. 2001. Violence and the Life Course: The Consequences of Victimization for Personal and Social Development. *Annual Review of Sociology* 27: 1-22.

[78] Mahler, Vincent. 2008. Electoral Turnout and Income Redistribution by the State: A Cross-National Analysis of the Developed Democracies. *European Journal of Political Research* 47: 161-183.

[79] Marvel, Thomas, and Carlisle Moody. 1996. Specification Problems, Police Levels, and Crime Rates. *Criminology* 34: 609-646.

[80] McCarty, Nolan, Keith T. Poole, and Howard Rosenthal. 2006. *Polarized America: The Dance of Ideology and Unequal Riches.* Cambridge, MA: MIT Press.

[81] Meltzer, Allan H., and Scott F. Richard. 1981. A Rational Theory of the Size of Government. *Journal of Political Economy* 89: 914-927.

[82] Milanovic, Branco. 2000. The Median-Voter Hypothesis, Income Inequality, and Income Redistribution: An Empirical Test with the Required Data. *European Journal of Political Economy Research* 16: 367-410.

[83] Moene, Karl Ove, and Michael Wallerstein. 2001. Inequality, Social Insurance, and Redistribution. *American Political Science Review* 95: 859-874.

[84] Moene, Karl Ove, and Michael Wallerstein. 2003. Earnings Inequality and Welfare Spending: A Disaggregated Analysis. *World Politics* 55: 485-516.

[85] Murray, David, Sherri P. Varnell, and Jonathan L. Blitstein. 2004. Design and Analysis of Group-Randomized Trials: A Review of Recent Methodological Developments. *American Journal of Public Health* 94: 423-432.

[86] OECD. 2011. *Divided We Stand: Why Inequality Keeps Rising.* OECD Publishing.

[87] Partridge, Mark. 2005. Does Inequality Affect U.S. State Economic Growth? *Journal of Regional Science* 45: 363-394.

[88] Peffley, Mark, Jon Hurwitz, and Paul M. Sniderman. 1997. Racial Stereotypes and Whites' Political Views of Blacks in the Context of Welfare and Crime. *American Journal of Political Science* 41: 30-60.

[89] Peffley, Mark, and Jon Hurwitz. 2002. The Racial Components of "Race-Neutral" Crime Policy Attitudes. *Political Psychology* 23: 59-75.

[90] Perotti, Roberto. 1996. Growth, Income Distribution, and Democracy: What the Data Say. *Journal of Economic Growth* 1: 149-187.

[91] Piketty, Thomas. 1995. Social Mobility and Redistributive Politics. *Quarterly Journal of Economics* 110: 551-584.

[92] Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, MA: The Belknap Press of Harvard University Press.

[93] Rabe-Hesketh, Sophia, and Anders Skrondal. 2008. *Multilevel and Longitudinal Modeling Using Stata*. College Station, TX: Stata Press.

[94] Rehm, Philipp. 2007. Who Supports the Welfare State? Determinants of Preferences Concerning Redistribution. In *Social Justice, Legitimacy and the Welfare State*, eds. Steffen Mau and Benjamin Veghte. Aldershot: Ashgate.

[95] Rehm, Philipp. 2009. Risks and Redistribution: An Individual-Level Analysis. *Comparative Political Studies* 42: 855-881.

[96] Rehm, Philipp. 2011. Social Policy by Popular Demand. *World Politics* 63: 271-299.

[97] Rehm, Philipp, Jacob S. Hacker, and Mark Schlesinger. 2012. Insecure Allies: Risk, Inequality, and Support for the Welfare State. *American Political Science Review* 106: 386-406.

[98] Roman, John, and Christy Visher. 2009. Prisoner Reentry Programming. In *Investing in the Disadvantaged: Assessing the Benefits and Costs of Social Policies*, eds. David L. Weimer and Adian Vinning. Washington, D.C.: Georgetown University Press.

[99] Romer, Thomas. 1975. Individual Welfare, Majority Voting, and the Properties of a Linear Income Tax. *Journal of Public Economics* 4: 163-185.

[100] Romer, Paul. 1990. Endogenous Technological Change. *The Journal of Political Economy* 98: S71-S102.

[101] Rueda, David. 2005. Insider-Outsider Politics in Industrial Democracies: The Challenge to Social Democratic Parties. *American Political Science Review* 99: 61-74.

[102] Rueda, David. 2007. *Social Democracy Inside Out: Partisanship and Labor Market Policy in Industrialized Democracies*. Oxford: Oxford University Press.

[103] Rueda, David. 2014. Food Comes First, Then Morals: Redistribution Preferences, Altruism, and Group Heterogeneity in Western Europe. CAGE Working Paper No. 200. Available at: http://www2.warwick.ac.uk/fac/soc/economics/research/centres/cage/manage/publications/200-2014_rueda.pdf.

[104] Rueda, David, and Daniel Stegmueller. 2014. Equality or Crime? Redistribution Preferences and the Externalities of Inequality in Western Europe. Unpublished manuscript. Department of Politics and International Relations, University of Oxford.

[105] Scheve, Kenneth, and David Stasavage. 2006. Religion and Preferences for Social Insurance. *Quarterly Journal of Political Science* 1: 255-286.

[106] Schumpeter, Joseph. 1943. *Capitalism, Socialism, and Democracy*. London: G. Allen & Unwin Ltd.

[107] Shayo, Moses. 2009. A Model of Social Identity with an Application to Political Economy: Nation, Class and Redistribution. *American Political Science Review* 103: 147-174.

[108] Shelton, Cameron. 2007. The Size and Composition of Government Expenditure. *Journal of Public Economics*. 91: 2230-2260.

[109] Shepherd, Joanna. 2002. Police, Prosecutors, Criminals, and Determinate Sentencing: The Truth About Truth-in-Sentencing Laws. *Journal of Law and Economics* 45: 505-530.

[110] Siebert, Horst. 1998. Consequences of Rising Income Inequality: A Comment. Kiel Working Papers No. 875. Available at: http://hdl.handle.net/10419/1028.

[111] Stegmueller, Daniel. 2013a. Religion and Redistributive Voting in Western Europe. *Journal of Politics* 75: 1064-1076.

[112] Stegmueller, Daniel. 2013b. How Many Countries for Multilevel Modeling? A Comparison of Frequentist and Bayesian Approaches. *American Journal of Political Science* 57: 548-561.

[113] Stegmueller, Daniel, Peer Scheepers, Sigrid Rossteutscher, and Eelke de Jong. 2012. Support for Redistribution in Western Europe: Assessing the Role of Religion. *European Sociological Review* 28: 482-497.

[114] Svallfors, Stefan. 1997. Worlds of Welfare and Attitudes to Redistribution: A Comparison of Eight Western Nations. *European Sociological Review* 13: 283-304.

[115] Svallfors, Stefan. 2004. Class Attitudes and the Welfare State: Sweden in Comparative Perspective. *Social Policy and Administration* 38: 119-138.

[116] Swenson, Peter. 2002. *Capitalists Against Markets: The Making of Labor Markets and Welfare States in the United States and Sweden.* Oxford: Oxford University Press.

[117] Unnever, James D., and Francis T. Cullen. 2010. The Social Sources of Americans' Punitiveness: A Test of Three Competing Models. *Criminology* 48: 99-129.

[118] Unnever, James D., Francis T. Cullen, and James D. Jones. 2008. Public Support for Attacking the "Root Causes" of Crime: The Impact of Egalitarian and Racial Beliefs. *Sociological Focus* 41: 1-33.

[119] Vining, Aidan, and David L. Weimer. 2010. An Assessment of Important Issues Concerning the Application of Cost-Benefit Analysis to Social Policy. *Journal of Cost-Benefit Analysis* 1: Article 6.

[120] Welch, Finis. 1999. In Defence of Inequality. *American Economic Review* 89: 1-17.

[121] Western, Bruce. 2002. The Impact of Incarceration on Wage Mobility and Inequality. *American Sociological Review* 67: 526-546.